



# FOOD BANK FOR NEW YORK CITY COOKSHOP EVALUATION REPORT

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# I. Executive Summary

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## A. INTRODUCTION

### CookShop Program

Food Bank For New York City (Food Bank) has a long and successful history of administering the CookShop program, a multi-level nutrition intervention reaching more than 50,000 participants across all five boroughs in its mission to provide the knowledge and tools to adopt and enjoy a nutritious diet and active lifestyle on a limited budget. CookShop teaches nutrition, physical activity and cooking skills, while fostering enthusiasm for fresh, affordable fruits, vegetables and other whole foods.<sup>1</sup> Students participating in CookShop Classroom for Elementary School (CCes) learn about the five food groups through fun, hands-on lessons during the school day, designed to build awareness of whole and minimally-processed foods and the importance of exercise using age-appropriate curricula for each grade level. Utilizing a train-the-trainer approach, Food Bank ensures that every educator participating in the program is provided with the necessary tools to implement CookShop, including training, ongoing technical support, comprehensive curriculum materials and all of the food, supplies and equipment needed for cooking lessons and class activities.

### Study Rationale

The purpose of this study is to provide Food Bank with 1) a rigorous outcome evaluation of CookShop to determine the extent to which the program impacts the healthy eating and physical activity behaviors of its participants, and 2) a companion process evaluation to document aspects of CookShop implementation in intervention schools during the 2016-2017 school year. The process evaluation presents opportunities to examine several short-term outcomes, or organizational motivators, at the environmental settings-level of the *SNAP-Ed Evaluation Framework*<sup>2</sup>, such as organizational need and readiness and the presence of champions within SNAP-Ed qualified CookShop schools.

## B. STUDY METHODS

### Impact Evaluation

Using indicators from the *SNAP-Ed Evaluation Framework*, the impact evaluation primarily examines medium-term outcomes at the individual-level, i.e., behavioral changes resulting from participation in nutrition and physical activity focused direct education lessons. Data were collected and analyzed to compare individuals participating in the program to those not exposed to CookShop at three points in time—pre-CookShop implementation (baseline), 1 week post-implementation (after CookShop lessons ends) and 6 weeks post-implementation—on measures of at-home consumption, physical activity behaviors, food security and demographics.

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<sup>1</sup> Food Bank for New York City. (2017). *CookShop*. Retrieved from: <https://www.foodbanknyc.org/cookshop-in-schools/>

<sup>2</sup> *SNAP-Ed Evaluation Framework Interpretive Guide*. Retrieved from: <https://snaped.fns.usda.gov/sites/default/files/uploads/SNAP-EdEvaluationFrameworkInterpretiveGuide.PDF>



## **OUTCOMES AND MEASURES**

The CookShop evaluation includes measures taken or adapted from previous similar studies and evaluations of SNAP-Ed programs, such as Cooking Matters<sup>3</sup> and the California Youth Nutrition and Physical Activity Survey<sup>4</sup> to examine healthy behaviors, including fruit and vegetable consumption, consumption of whole grains, reduction in sugar-sweetened beverages and time spent on physical activity, among others. In addition to these measures, information was collected on the demographic characteristics of the caregivers and children, including child's grade, race, ethnicity, previous participation in CookShop, family participation in assistance programs, such as WIC, SNAP, free lunch, caregiver's age and gender and number of people living in the household.

## **SAMPLE AND DATA COLLECTION**

The intervention group comprises children enrolled in grades pre-kindergarten through fifth grade in New York City whose schools were new to CookShop in the 2015-2016 or the 2016-2017 school year (n=23 schools). Students from demographically similar schools on the wait list to receive CookShop comprise the comparison group (n=5 schools). Principals who gave consent for their school to participate in the CookShop evaluation received parent packets in English and Spanish to be distributed to the classrooms and taken home by students. Over 8,500 packets were distributed, which included an introduction letter, consent form, participant contact card form, baseline survey and stamped /addressed envelope for participants to return surveys and contact information directly to Altarum. To boost response rates, flyers were sent to all schools in February 2017 listed a link to an online survey. For completion of the baseline survey, respondents were sent a \$10 gift certificate to Easy Market stores. Response to the pre-implementation survey was approximately 10%, yielding a total baseline sample of 580 students.

All baseline respondents received two follow-up surveys sent directly to them via their preferred method (mail, email or text). For completion of each follow-up, respondents received \$15 gift certificates. The response rate for each follow-up survey was approximately 21%, respectively, yielding 129 respondents at the 1-week follow-up, 125 at the 6-week follow-up, and enough statistical power to detect significant differences for several outcomes.

## **Process Evaluation**

The process evaluation captured information about CookShop implementation in select schools to determine the extent to which CookShop was implemented as intended, identify implementation facilitators and challenges, and ascertain if facilitators or challenges affected the overall impact of the program. Information on the outcomes, measures, sample and data collections are provided below.

## **OUTCOMES AND MEASURES**

Process data were collected through key informant interviews, teacher surveys and observations of teacher training sessions and classroom interventions. The indicators measured comprise the school environment for healthy eating and physical activity, the presence of a champion, school and

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<sup>3</sup> Cooking Matters<sup>®</sup> survey <https://foodshuttlesatellites.wordpress.com/forms/cooking-matters-resources/surveys/>

<sup>4</sup> California Youth Nutrition and Physical Activity Survey Grades 4–8  
<http://www.cdph.ca.gov/programs/cpns/Pages/Chapter1RequiredSurveysforImpactOutcomeEvaluation.aspx>



community support for CookShop, perceived success of CookShop, program implementation fidelity, technical assistance provided by Food Bank, and program effectiveness.

### SAMPLE AND DATA COLLECTION

Schools whose principals opted into the study were eligible to participate in the process evaluation. Key informants included Food Bank staff members and school administrators and personnel involved in CookShop implementation. All principals in CookShop and comparison schools were invited to participate in a telephone interview. All CookShop teachers were asked to complete an online survey before and after implementation of CookShop. Additionally, a subsample of schools was selected for a site visit (n=12) where principals, CookShop Coordinators (Coordinators) and select teachers (2-3 per school) were interviewed and observed delivering a CookShop lessons. Exhibit II-1 summarizes the number and types of respondents by data collection mode.

**Exhibit II-1. Number and types of respondents by data collection mode.**

Timeframe	Type of Data Collection	Number of Respondents
<b>In-depth Interviews</b>		
Food Bank	Group phone interview	• 8 staff members
CookShop (Intervention) Schools	Phone interview (early-implementation)	• 20 school administrators*
	Onsite interview	• 11 school administrators • 12 Coordinators • 26 classroom teachers (2-3 per site visit school)
Comparison Schools	Phone interview (early-implementation of CookShop in intervention schools)	• 5 school administrators
<b>Observations</b>		
CookShop Teacher Training	Direct observation	
CookShop Classroom Observations	Direct observation of CookShop classrooms/lessons	• 29 classrooms (1 pre-K, 5 K, 9 1st grade, 2 2nd grade, 3 3rd grade, 7 4th grade, 7 5th grade) <i>Note: Some classrooms comprised more than one grade level</i>
<b>Surveys</b>		
CookShop Classroom Teacher	Online survey (early-implementation)	• 88 teachers
	Online survey (late-implementation)	• 34 teachers

\*1 principal was interviewed who works with 2 CookShop schools; 1 CookShop school administrator was not interviewed.

### Analysis Approach

Paper parent survey data and online survey data were combined to create a complete data file. If parents responded to both a web and paper survey, only the earliest response was kept for analysis. A food security category measure was calculated according to the USDA Economic Research Service guidelines for the Six-Item Food Security Scale<sup>5</sup> comprising the following categories: High/marginal food security, low food security, very low food security. Descriptive statistics for the full baseline sample and

<sup>5</sup> Economic Research Service. *Six-Item Short Form of the Food Security Survey Module*. Retrieved from: <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/survey-tools/>



for those responding to each of the follow-up surveys were produced and compared between the CookShop and comparison students. Outcomes were examined cross-sectionally and compared between the groups at both follow-up time points. To determine the impact of the intervention on behavioral change over time, while controlling for demographic factors related to the outcomes, repeated measures modeling was conducted with both fixed and random effects. Data management and analysis were conducted using IBM SPSS version 25 and SAS Software for Windows, version 9.4.

Interview responses were entered into NVivo version 11 and organized by broad process evaluation research questions and process indicators. Teacher survey data were analyzed using SAS Software for Windows Version 9.4 to produce descriptive statistics at each time point and examine change over time using paired t-tests or tests for agreement, where relevant.

## C. IMPACT EVALUATION FINDINGS

### Sample Respondents

There were 580 respondents to the baseline survey, comprising 342 CookShop parents and 238 comparison group parents. A total of 128 parents responded to the 1-week follow-up survey and 124 parents responded to the 6-week follow-up survey; 75 parents responded to both follow-up surveys. Follow-up survey respondents were significantly more likely than baseline only respondents to have a child in the 4<sup>th</sup> or 5<sup>th</sup> grade, have a status of very low food insecurity, have only one adult in the household, use a food pantry or soup kitchen and be Black or African American. Follow-up survey respondents were significantly less likely than baseline only respondents to participate in WIC.

Only a few significant differences were identified between the CookShop and comparison respondents who responded to at least one follow-up survey, including student grade level, baseline food security status and race. Specifically, there were significantly more third graders, households with very low food security and fewer Asian respondents in the CookShop group than in the comparison group. These three characteristics were controlled for in the change over time analysis.

### Behavior Change Outcomes

Rates of food insecurity in the study sample were considerably higher than the national average and CookShop parents reported increased levels of food insecurity at the 6-week follow-up compared to baseline. However, this is likely related to the timing of the 6-week follow-up, which was conducted in the summer months when students do not have access to school meals. Despite high levels of food insecurity at baseline, parents of CookShop students indicated an already high degree of self-efficacy relative to selecting fresh fruits and vegetables. Based on findings from the outcome evaluation, participation in CookShop positively influences individual-level healthy eating, physical activity and reduced sedentary behaviors.

#### **INDIVIDUAL-LEVEL BEHAVIOR CHANGE: HEALTHY EATING (MT1)**

- ▲ CookShop children increased their willingness to try new fruits and vegetables from pre-intervention to 1-week post intervention, decreased sugar-sweetened beverages consumption and increased whole grain consumption significantly more than comparison school children after controlling for demographic characteristics.
- ▲ After participating in CookShop, children consumed more cups of fruits and vegetables on a typical day; however, these changes were not significantly different than those observed among



comparison school children.

### **INDIVIDUAL-LEVEL BEHAVIOR CHANGE: PHYSICAL ACTIVITY AND REDUCED SEDENTARY BEHAVIOR (MT3)**

- ▲ Children who participated in CookShop decreased the amount of time they spend in front of a screen (not for school work) and increased the number of days in which they participated in 30 minutes of physical activity significantly more than comparison children.

## **D. PROCESS EVALUATION FINDINGS**

The process evaluation captured information about CookShop implementation in select schools, from the initial stages of school enrollment and planning through the implementation of interventions. Information about the student body and school environment was gathered and provides important context about the setting in which CookShop is delivered. Many successes were documented through the process evaluation, along with challenges that could affect CookShop's impact and opportunities for improvement. This section highlights key findings from the process evaluation.

### **School Environment for Healthy Eating and Physical Activity**

Traditionally a direct education program, CookShop primarily targets the individual level of the Social-Ecological Model; however, the school environment interacts with students' healthy eating and physical activity behaviors. For this reason, an environmental scan was conducted to document and better understand the programs, services and supports already active in CookShop and comparison schools. Findings of the environmental scan are described below.

- ▲ Students attending CookShop schools are racially and ethnically diverse and speak a multitude of languages.
- ▲ Interviewed administrators (n=17) indicated that between 73% and 100% of their students come from families at or below 185% of the Federal Poverty Line and nearly half of the 26 interviewed administrators estimated that 30% or more of their students are homeless, live in foster care or are part of a family that "doubles up" on housing with one or more other families.
- ▲ Only 2 of the 26 administrators interviewed reported that their school had conducted a formal needs assessment. Indeed, many interviewed administrators were unfamiliar with this topic, thus presence of a needs assessment may be under reported.
- ▲ Most schools have a gymnasium, playground (or access to one), cafeteria and school kitchen.
- ▲ Overall, administrators, teachers and Coordinators in 16 of the 26 schools (61.5%) reported that their school has one or more additional programs or initiatives in place that encourage healthy eating. Additionally, 21 of 26 schools reported having one or more policies or practices related to healthy eating. Examples include healthy snack policies (at least 11 schools), healthy celebrations (in 4 schools) and prohibiting unhealthy foods (e.g., chips, cookies, soda) brought from home.
- ▲ Almost all of evaluation schools (88.5%) indicated that they have at least one physical activity program aside from CookShop, and 14 of the 26 schools had policies or practices that encourage physical activity, such as having recess before lunch, leaving school facilities open on weekends for families to engage in physical activity or recommending that teachers include a minimum amount of physical activity in their classroom each day.
- ▲ Interviewees from 16 of the 26 schools indicated that one or more individuals in their school acts as a Champion for Change, who is most often the gym teacher (10 schools).



## School and Community Support for CookShop

Support for CookShop within schools and communities is essential to maximizing the program's effectiveness, sustainability and integration into other curricula and student lifestyles. In addition, the program should be supported and backed by school administration, teachers, and Coordinators. Key findings related to school and parent support for the CookShop program are described below.

### SCHOOL SUPPORT FOR COOKSHOP

- ▲ Initial support for CookShop implementation was generated by an administrator (i.e., principal, assistant principal or dean) in half of the evaluation schools (13 of 26), while a group of teachers, administrators and staff members generated initial support in 10 schools and an individual other than an administrator or external group initiated support in 3 schools.
- ▲ Administrators provided support to their staff in implementing CookShop by precipitating their school's CookShop enrollment, selecting the teachers or grades that implement CookShop and/or invite teachers to volunteer and supporting teachers in attending the training held by Food Bank. Coordinators provided support to teachers by assisting with the day-to-day operations of the program. On a scale of 1 to 10, teachers and Coordinators interviewed during onsite visits (n=31) rated their school's overall support for CookShop as 9.4 on average.

### PARENT SUPPORT FOR COOKSHOP

- ▲ All schools implementing CookShop also deliver CookShop for Families, a series of six classes that are offered to parents and guardians and complement the lessons delivered CookShop Classroom. Schools reported weekly attendance that varied from as few as five parents to full capacity. Key informants reported that they receive overwhelmingly positive feedback from parents and guardians who attend CookShop for Families.
- ▲ Many teachers, administrators and Coordinators reported that families are not as engaged in school activities as they would like, often due to work schedules. Some indicated that parents who attend CookShop for Families are more likely to be engaged in school in general, and that they may be missing parents of the most vulnerable students.
- ▲ Overall, interviewed teachers rated the success of CookShop in reaching parents as a 5.2 (n=13), by far the lowest rating of any other component of the program. From the online surveys, teachers rated their certainty to engage parents and caregivers through take home materials from CookShop Classroom as 7.1 before implementation and 5.9 after implementation on a scale of 1 to 10, where 10 is the highest level of certainty (n=34).

## Operationalizing CookShop: Successes and Challenges

In order to successfully implement CookShop, Coordinators and teachers must work together and with Food Bank to order groceries, distribute materials and complete verification forms. The following are key findings from the process evaluation related to CookShop operations.

- ▲ Interviewed CookShop Coordinators (n=10) scored their success ordering and receiving grocery supplies an average score of 8.6 on a scale of 1 to 10 where 10 is very successful and they rated their success in distributing groceries to classrooms as 9.4 on average.
- ▲ Coordinators and teachers reported that verification activities were tedious and they experienced several technical difficulties when submitting the forms. Coordinators frequently had to remind teachers to complete their verification forms and in several instances they took it upon themselves to submit the forms.
- ▲ Interviewed school staff were very satisfied with the support they received from Food Bank as were teacher respondents to the online surveys.



- ▲ Teachers and Coordinators had mixed opinions about the training seminars. Aspects of the training that they liked most were that it was straight-forward, adequately prepared them to implement CookShop and included hands-on activity, which allowed for a deeper understanding of the program. The most frequent critique was that travel to the training location was difficult.

## Implementing CookShop Classroom: Successes and Challenges

Food Bank provides all teachers with a grade-specific lesson plan to guide delivery of CookShop Classroom. The curriculum for grades K-2 spans 18 weeks and includes three lessons for each of six CookShop themes, while grades 3-5 receive 6 weekly lessons or one lesson per theme. Each theme includes three components—an educational overview, a cooking activity and a wrap-up segment that integrates a brief physical activity. The following findings highlight key successes and challenges associated with CookShop implementation:

- ▲ Teachers were confident in their ability to implement CookShop into their classroom and carry out the lesson plans both before and after implementation.
- ▲ Interviewed teachers (n=22) reported a high level of success engaging students in CookShop, scoring student engagement an average of 9.2 on a scale of one to ten.
- ▲ Interviewed teachers (n=21) generally described the lesson plans as easy to follow and rated their success implementing the educational component of CookShop an average of 7.9 (range: 5 to 10). Critiques of the lesson plans included that the material was too complex for some students, especially younger students and those with learning disabilities.
- ▲ Teachers reported that students looked forward to CookShop and that, while their favorite component of the program was the cooking activities, students also enjoyed other hands-on activities and discussions stimulated by the lessons. Interviewees believed that their students' were more willing to try new foods during a CookShop lesson compared to during school lunch because they were involved in preparing the recipe and saw their friends tasting the foods.
- ▲ Many teachers found it challenging to fit ingredient preparation into their day. Most teachers reported that they chose to prepare ingredients for CookShop cooking activities ahead of time because it would be too chaotic or time consuming to have the class cut or prepare ingredients during the time allotted for CookShop, especially for teachers with special needs students or without additional adult support in the classroom.
- ▲ According to interviewed teachers (n=15), the physical activity component of CookShop Classroom was least successful. Teachers who gave a low rating for the physical activity component commented that there was not enough time for implementation, which caused students to lose focus, or they did not notice a physical activity portion in the lesson plan.
- ▲ Teachers indicated that their students learned a great deal about the different food groups and healthy eating and have been exposed to new foods that they might not otherwise have the opportunity to try. Interviewees noted that students comment on whether their snacks are “Go!” or “Whoa!” foods<sup>6</sup> and are proud when they have a healthy snack.

## CookShop Classroom Observation Findings

As previously noted, evaluators conducted site visits to 12 CookShop schools between February and April 2017. Observations were conducted in approximately three classrooms per school during planned CookShop lessons, allowing for an objective assessment of program implementation and fidelity. Key

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<sup>6</sup> A recurring theme in CookShop Classroom lessons is that foods can often be described as Go!, Slow!, or Whoa! foods, depending on the frequency they should be consumed.



findings identified through direct observation of 15 K-2 and 14 3-5 grade classroom are described below.

- ▲ All observed CookShop lessons took place in traditional classrooms and most classrooms had ample space for the number of participants and planned activities (73.3% of K-2 classrooms and 64.3% of 3-5 classrooms).
- ▲ For K-2 classrooms, two-thirds of observed teachers lectured students or provided a verbal presentation on the lesson, while 80.0% engaged the participants in discussions. Among grade 3-5 classrooms, all observed teachers (100%) incorporated both lecture and participant discussion in the CookShop lessons. Food tasting was included in all but one (92.8%) of the observed grade 3-5 classrooms and in 4 out of 10 (40%) of the observed grades K-2 lessons. Similarly, movement/physical activity, a component of every lesson for grades 3-5, was observed only in one of the 14 lessons (7.1%).
- ▲ Teachers used a combination of teaching aids provided by Food Bank, such as the Big Book, Chef's bin and disposable supplies and aids not provided by Food Bank, such as a Smart Board and a story book with similar themes.
- ▲ On a scale of 1 to 5 (low to high engagement), evaluators rated student engagement in K-2 and 3-5 classrooms as 4.5 and 4.6 on average, respectively. Classrooms with the highest levels of student engagement had students who participated actively in discussions, enjoyed preparing and tasting foods and focused on and were excited about the lesson; students were most engaged during the hands-on activities.
- ▲ Slightly less than half (46.7%) of teachers in K-2 classrooms and almost two-thirds (64.3%) in 3-5 classroom maintained overall fidelity to the planned curriculum. Evaluators noted that several teachers did not follow the instructional portion of the lesson plan (e.g., omitted the "recap" at the beginning of the lesson, insufficient discussion during food tasting) or did not complete all activities outlined in the curriculum (e.g., Discovery Activity, scavenger hunt, review of take-home activities, physical activity).
- ▲ Two-thirds (66.7%) of K-2 teachers and approximately 43% of 3-5 teachers extended learning activities beyond the CookShop curriculum.
- ▲ In all observed classrooms, the teacher was the primary or only adult leading the lesson. Other school staff members or volunteers (e.g., classroom aid or assistant) were present during delivery of CookShop in a majority of the classrooms.

## E. CONCLUSIONS

Findings from the CookShop evaluation demonstrate the program's success and impact on staff, students and the schools in which they work and learn. Despite having a small sample size, modest measureable increases were observed in children's knowledge and behavior. Importantly, school and community enthusiasm for CookShop was evident, though more can be done to extend the program's scope and impact. Stakeholders engaged in the program and evaluation identified areas for improvement. Some of the offered suggestions are specific and implementation-focused while others point to the need for increased community or parent engagement and the implementation, adoption and expansion of policy, systems and environmental (PSE) change initiatives.

Food Bank's mission is "to end hunger by organizing food, information and support for community survival, empowerment and dignity." CookShop, a multilevel intervention, addresses this mission by reaching and impacting the knowledge and individual behaviors of children and their families. By expanding the PSE support it offers to CookShop schools, Food Bank has the potential to continually improve the environment in which staff members and children work and learn and further promote healthy behaviors and lifestyles.



## II. Introduction

### A. COOKSHOP PROGRAM

Food Bank For New York City (Food Bank) has a long and successful history of administering the CookShop program, a multi-level nutrition intervention reaching more than 50,000 participants across all five boroughs in its mission to provide the knowledge and tools to adopt and enjoy a nutritious diet and active lifestyle on a limited budget. With hands-on workshops engaging children and adults, CookShop teaches nutrition, physical activity and cooking skills, while fostering enthusiasm for fresh, affordable fruit, vegetables and other whole foods.<sup>7</sup> Environmental factors common in some New York neighborhoods, such as the lack of affordable grocery stores offering nutritious and fresh foods and the prevalence of low-cost unhealthy food options, along with families' limited financial resources, have contributed to chronic, diet-related conditions, including diabetes, obesity and hypertension. Exhibit I-1 displays the components of the program that are the subject of this evaluation.

#### CookShop Program Objectives:

- ▲ Increase familiarity with the five food groups and increase awareness and appreciation of whole and minimally processed foods;
- ▲ Increase acceptance and consumption of whole and minimally processed foods at school and home;
- ▲ Develop cooking skills and appreciation for eating meals made with fruit, vegetables, whole grains, legumes and fat-free or low-fat dairy products; and
- ▲ Engage families in making healthy food choices at school, at home and in their communities.

#### Exhibit I-1. CookShop Program Components

CookShop Component	Total Lessons	Lessons per Unit (6 Units total)
CookShop Classroom for Elementary School, reaching grades pre-K-2	18 weekly lessons	3 lessons per unit
CookShop Classroom for Elementary School, reaching grades 3-5	6 weekly lessons	1 lesson per unit
CookShop for Families, reaching parents & guardians	6 monthly workshops	1 in-school workshop per unit

Students participating in CookShop Classroom for Elementary School (CCes) learn about the five food groups through fun, hands-on lessons during the school day, designed to build awareness of whole and minimally-processed foods and the importance of exercise. The program features age-appropriate curricula for each grade level, providing schools with the opportunity to cultivate school wellness and giving students the opportunity to build upon their nutrition knowledge year after year.

CookShop for Families (CF) offers hands-on workshops for parents and caregivers of students in sites

<sup>7</sup> Food Bank For New York City. (2017). *CookShop*. Retrieved from: <https://www.foodbanknyc.org/cookshop-in-schools/>



participating in CookShop Classroom. CF focuses on nutrition, healthy cooking, reading and understanding food labels, meal planning, portion sizes and more so that parents and caregivers can lead a more healthy and active way of life and reinforce the lessons their children are learning in the classroom.

Using a train-the-trainer approach, Food Bank ensures every educator participating in the program is provided with the tools needed to implement CookShop. These tools include training, ongoing technical support, comprehensive curriculum materials, and all of the food, supplies and equipment needed for cooking lessons and class activities.

## B. STUDY RATIONALE

CookShop is fully funded by SNAP-Ed (Supplemental Nutrition Assistance Program Education), the nutrition promotion and obesity prevention component of SNAP. With the passage of the Healthy Hunger-Free Kids Act in 2010, a number of changes have occurred in the way in which the USDA Food and Nutrition Service (FNS) administers SNAP-Ed. Foremost among these changes is the emphasis on the use of evidence-based nutrition education interventions that prove to have the intended effect on participant behavior. The SNAP-Ed Toolkit, first published in 2013, was designed to help States identify and implement evidence-based interventions and policy, systems and environmental (PSE) change strategies for the promotion of nutrition and prevention of obesity.<sup>8</sup> Since its initial release, the toolkit has been updated and now includes more than 80 evidence-based strategies and interventions that are designated as emerging, practice-tested or research-tested. CookShop's evidence-based category was upgraded in 2016 from *emerging* to *practice-tested*. More recently, CookShop was upgraded to *research-tested*, a status reserved for interventions that have been published in a peer-reviewed journal.

The purpose of this study is to provide Food Bank with 1) a rigorous outcome evaluation of CookShop to determine the extent to which the program impacts the healthy eating and physical activity behaviors of its participants, and 2) a companion process evaluation to document aspects of CookShop implementation in intervention schools during the 2016-2017 school year.

As illustrated in Exhibit I-2, the SNAP-Ed Evaluation Framework outlines 51 indicators that can be used to document short-, medium- and long-term outcomes at three levels: individual, environmental settings and sectors of influence.<sup>9</sup> This CookShop impact evaluation primarily examines medium-term outcomes at the individual-level, i.e., behavioral changes resulting from participation in direct nutrition and physical activity lessons. The process evaluation presents opportunities to examine several short-term outcomes, or organizational motivators, at the environmental settings-level of the framework, such as organizational need and readiness and the presence of champions within SNAP-Ed qualified CookShop schools.

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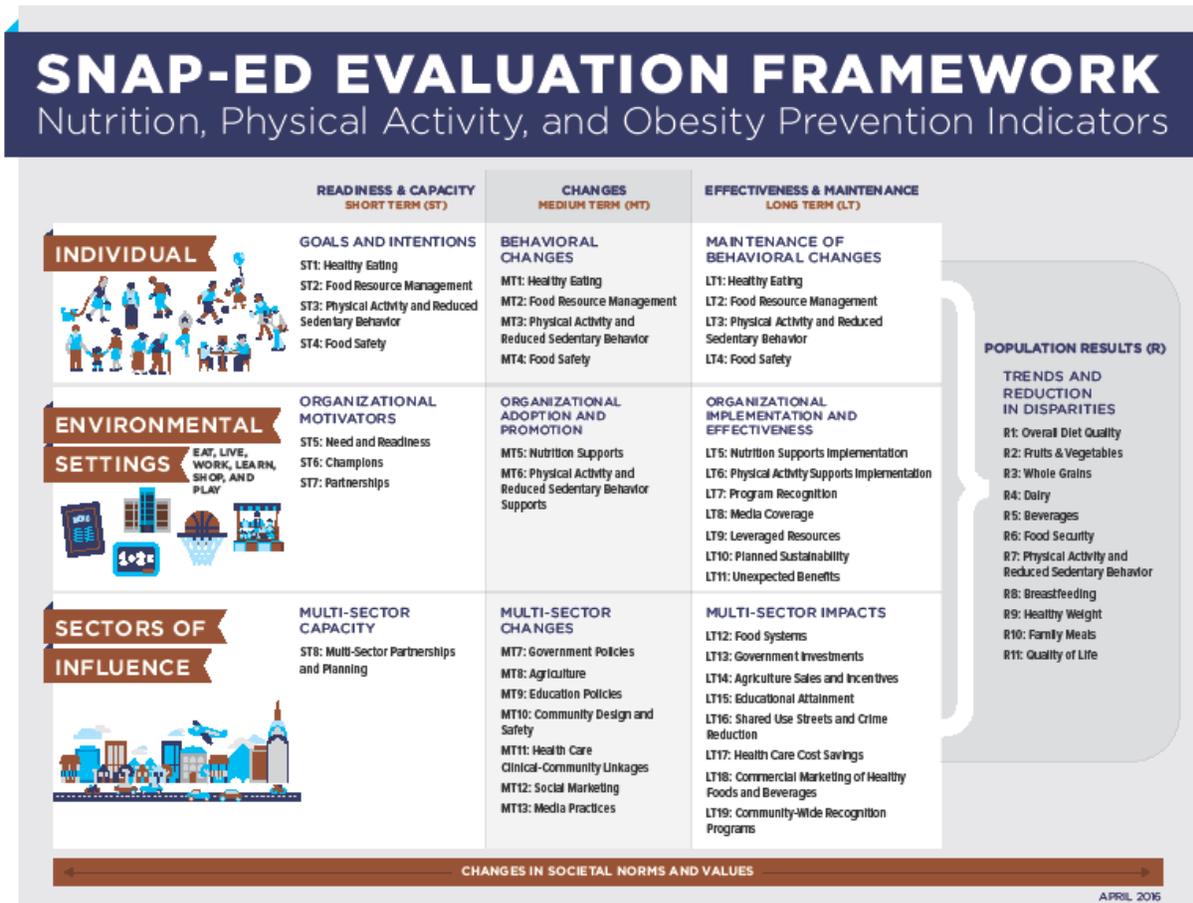
<sup>8</sup> *SNAP-Ed Strategies & Interventions: An Obesity Prevention Toolkit for States*. Retrieved from: <https://snaped.fns.usda.gov/snap-ed-strategies-interventions-snap-ed-toolkit>

<sup>9</sup> *SNAP-Ed Evaluation Framework Interpretive Guide*. Retrieved from:

<https://snaped.fns.usda.gov/sites/default/files/uploads/SNAP-EdEvaluationFrameworkInterpretiveGuide.PDF>



## Exhibit I-2. SNAP-Ed Evaluation Framework



### C. ORGANIZATION OF THE REPORT

This report describes the methods and findings of the CookShop evaluation and describes the process evaluation and the impact evaluation separately. Findings are included by SNAP-Ed evaluation indicator or the topic-area to which the outcome is related.

## III. Study Methods

### A. IMPACT EVALUATION

The primary goal of CookShop is to improve dietary choices and physical activity levels in children and their families. For the impact evaluation, data were collected and analyzed to describe and measure the influence of CookShop on healthy behaviors by comparing individuals participating in the program to those not exposed to CookShop. Parents of children in classrooms participating in CookShop and parents of children in comparison schools were surveyed at three points in time—pre-CookShop implementation, 1 week after the end of implementation and 6 weeks after the end of implementation—relative to at-home consumption, physical activity behaviors, food security and demographics.



## Outcomes and measures

CookShop aims to improve healthy behaviors, including fruit and vegetable consumption, consumption of whole grains, reduction in sugar-sweetened beverages and time spent doing physical activity, among others. Exhibit II-1 outlines the SNAP-Ed medium-term (MT) indicators and the corresponding outcomes measured in the CookShop evaluation. The measures are taken or adapted from previous similar studies and evaluations of SNAP-Ed programs, such as Cooking Matters<sup>®10</sup> and the California Youth Nutrition and Physical Activity Survey.<sup>11</sup> In addition to these measures, information was collected on the demographic characteristics of the caregivers and children, including the following:

- ▲ Grade level
- ▲ Race
- ▲ Ethnicity
- ▲ Previous participation in CookShop
- ▲ Family participation in assistance programs, such as WIC, SNAP, free lunch
- ▲ Caregiver’s age and gender
- ▲ Number of people living in the household

### Exhibit II-2. Individual–level indicators from SNAP-Ed evaluation framework and related behavioral change outcomes and measures for the evaluation of CookShop.

Outcome	Measure
<b>MT1: Healthy Eating</b>	
Increased <i>frequency</i> of consumption of fruit and vegetables	<ul style="list-style-type: none"> <li>• During the <b>past week</b>, about how many cups of <b>fruit</b> did your child eat on a typical day? Do <b>NOT</b> include fruit juice or fruit with added sugar, such as frozen fruit pops.               <ul style="list-style-type: none"> <li>○ Responses: None, ½ cup, 1 cup, 1 ½ cups, 2 cups, 2 ½ cups, 3 cups or more</li> </ul> </li> <li>• During the <b>past week</b>, about how many cups of <b>vegetables</b> did your child eat on a typical day? Do <b>NOT</b> include fried potatoes, such as french fries, hash browns or tater tots.<sup>12</sup> <ul style="list-style-type: none"> <li>○ Responses: None, ½ cup, 1 cup, 1 ½ cups, 2 cups, 2 ½ cups, 3 cups or more</li> </ul> </li> <li>• During the past week, on how many days did you give your child a <b>vegetable</b> with <u>dinner</u>? Do <b>not</b> include fried potatoes, such as french fries, hash browns or tater tots.               <ul style="list-style-type: none"> <li>○ Responses: 0-7 days</li> </ul> </li> </ul>
Increased <i>variety</i> of consumption of fruit and vegetables	<ul style="list-style-type: none"> <li>• During the <b>past week</b>, on how many days did your child eat <u>more than one kind</u> of <b>fruit</b> each day? Do <b>NOT</b> include fruit juice or fruit with added sugar, such as frozen fruit pops.               <ul style="list-style-type: none"> <li>○ Responses: 0-7 days</li> </ul> </li> <li>• During the <b>past week</b>, on how many days during did your child eat <u>more than one kind</u> of <b>vegetable</b> each day? Do <b>not</b> include fried potatoes, such as french fries, hash browns or tater tots.               <ul style="list-style-type: none"> <li>○ Responses: 0-7 days</li> </ul> </li> </ul>

<sup>10</sup> Cooking Matters survey <https://foodshuttlesatellites.wordpress.com/forms/cooking-matters-resources/surveys/>

<sup>11</sup> California Youth Nutrition and Physical Activity Survey Grades 4–8 <http://www.cdph.ca.gov/programs/cpns/Pages/Chapter1RequiredSurveysforImpactOutcomeEvaluation.aspx>

<sup>12</sup> FNS, Office of Policy Support (2013) *Models of Supplemental Nutrition Assistance Program Education and Evaluation, Wave II*. Retrieved from: <https://idph.iowa.gov/Portals/1/Files/INN/SNAPedWaveII.pdf>.



Outcome	Measure
	<ul style="list-style-type: none"> <li>• How strongly do you agree or disagree with this statement: My child is willing to try a new kind of <b>fruit</b>. Do <u>NOT</u> include fruit juice or fruit with added sugar, such as frozen fruit pops.               <ul style="list-style-type: none"> <li>○ Responses: Strongly Agree, Agree, Disagree, Strongly Disagree</li> </ul> </li> <li>• How strongly do you agree or disagree with this statement: My child is willing to try a new kind of <b>vegetable</b>? Do <u>NOT</u> include fried potatoes, such as french fries, hash browns or tater tots.<sup>12</sup> <ul style="list-style-type: none"> <li>○ Responses: Strongly Agree, Agree, Disagree, Strongly Disagree</li> </ul> </li> </ul>
Reduced consumption of sugar-sweetened beverages	<ul style="list-style-type: none"> <li>• In the <b>past week</b>, how often did your child drink a can, bottle or glass of regular soda, sports drink, Kool-Aid, energy drink, lemonade, sweetened tea or other sugar sweetened beverage? (<b>Do not</b> count diet or zero calorie drinks.)<sup>13</sup> <ul style="list-style-type: none"> <li>○ Responses: Never or less than 1 per week, 1 per week, 2-4 per week, 5-6 per week, 1 per day, 2-3 per day, 4+ per day</li> </ul> </li> <li>• In the past week, how often did your child drink a bottle or glass of plain water?<sup>13</sup> <ul style="list-style-type: none"> <li>○ Responses: Never or less than 1 per week, 1 per week, 2-4 per week, 5-6 per week, 1 per day, 2-3 per day, 4+ per day</li> </ul> </li> </ul>
Increased choice of whole grains in place of refined grains	<ul style="list-style-type: none"> <li>• When your child eats grain products, how often does he/she eat whole grains, like brown rice instead of white rice, whole grain bread instead of white bread, whole grain or corn tortillas instead of flour tortillas, and whole grain cereals such as oatmeal or farina?<sup>14</sup> <ul style="list-style-type: none"> <li>○ Responses: Never, Once in a while, Sometimes, Most of the time, Always, My child does not eat grain products</li> </ul> </li> </ul>
Increased choice of low-fat/fat-free milk and dairy products in place of full fat products	<ul style="list-style-type: none"> <li>• When your child has milk, how often does he/she drink non-fat, skim, low-fat or 1% milk?               <ul style="list-style-type: none"> <li>○ Responses: Never, Once in a while, Sometimes, Most of the time, Always, My child does not drink milk</li> </ul> </li> <li>• When your child eats dairy products like yogurt, cheese, cottage cheese, sour cream, etc., how often does he/she eat low fat or fat-free options?<sup>15</sup> <ul style="list-style-type: none"> <li>○ Responses: Never, Once in a while, Sometimes, Most of the time, Always, My child does not eat dairy products</li> </ul> </li> </ul>
Healthier snacking behavior	<ul style="list-style-type: none"> <li>• During the past week, on how many days did you give your child fruit for a <u>snack</u>? Do <u>not</u> include fruit juice or fruit with added sugar, such as frozen fruit pops.               <ul style="list-style-type: none"> <li>○ Responses: 0-7 days</li> </ul> </li> <li>• During the past week, on how many days did you give your child fruit with <u>dinner or for dessert</u>? Do <u>not</u> include fruit juice or fruit with added sugar, such as frozen fruit pops.               <ul style="list-style-type: none"> <li>○ Responses: 0-7 days</li> </ul> </li> <li>• During the past week, on how many days did you give your child a vegetable for a <u>snack</u>? Do <u>not</u> include fried potatoes, such as french fries, hash browns or tater tots.<sup>12</sup> <ul style="list-style-type: none"> <li>○ Responses: 0-7 days</li> </ul> </li> </ul>

<sup>13</sup> Adapted from: <http://sharedresources.fredhutch.org/sites/default/files/SnackQSample.pdf>

<sup>14</sup> Adapted from: EFNEP Nutrition Education Survey <https://www2.ag.purdue.edu/programs/hhs/efnep/Pages/ResourceEvaluation.aspx>

<sup>15</sup> Adapted from: Cooking Matters survey <https://foodshuttlesatellites.wordpress.com/forms/cooking-matters-resources/surveys/>



Outcome	Measure
<b>MT2: Food Resource Management</b>	
Food security	<ul style="list-style-type: none"> <li>• In the <i>last 30 days</i>, how often were these statements true?<sup>16</sup> <ol style="list-style-type: none"> <li>1. “I worried whether my food would run out before I got money to buy more.”</li> <li>2. “The food that I bought just didn’t last, and I didn’t have money to get more.”</li> <li>3. “I couldn’t afford to eat balanced meals.” <ul style="list-style-type: none"> <li>○ <i>Responses: Often, Sometimes, Never</i></li> </ul> </li> </ol> </li> <li>• In the last 30 days, did (you/you or other adults in your household) ever cut the size of your meals or skip meals because there wasn’t enough money for food? <ul style="list-style-type: none"> <li>○ <i>Responses: Yes, No, Don’t know</i></li> </ul> </li> <li>• In the last 30 days, did you ever eat less than you felt you should because there wasn’t enough money for food? <ul style="list-style-type: none"> <li>○ <i>Responses: Yes, No, Don’t know</i></li> </ul> </li> <li>• [If yes to above] In the last 30 days, how many days did this happen? <ul style="list-style-type: none"> <li>○ <i>Responses: # days</i></li> </ul> </li> <li>• In the last 30 days, were you ever hungry, but didn’t eat because there wasn’t enough money for food? <ul style="list-style-type: none"> <li>○ <i>Responses: Yes, No, Don’t know</i></li> </ul> </li> </ul>
Helpful shopping practices	<ul style="list-style-type: none"> <li>• In the last 30 days, how often did your child ask you to buy a certain type of fruit? <ul style="list-style-type: none"> <li>○ <i>Responses: Never, Rarely, Sometimes, Often, Always</i></li> </ul> </li> <li>• In the last 30 days, how often did your child ask you to buy a certain type of vegetable? <ul style="list-style-type: none"> <li>○ <i>Responses: Never, Rarely, Sometimes, Often, Always</i></li> </ul> </li> <li>• How strongly do you agree or disagree with each of the following statements? <ol style="list-style-type: none"> <li>1. I know how to select fresh fruits and vegetables when I shop for my family.</li> <li>2. There is a large selection of fresh fruits or vegetables where I live.</li> <li>3. I do not usually buy fresh fruits or vegetables because they spoil quickly.</li> <li>4. I can afford fruits or vegetables in the store where I shop for most of my food.</li> <li>5. I encourage my child to try new fruits or vegetables.</li> </ol> <ul style="list-style-type: none"> <li>○ <i>Responses: Strongly agree, Agree, Disagree, Strongly disagree</i></li> </ul> </li> </ul>
<b>MT3: Physical Activity and Reduced Sedentary Behavior</b>	
Increased participation in the recommended 60 minutes of physical activity per day	<ul style="list-style-type: none"> <li>• During the past week, on how many days did your child take part in physical activity that made his/her heart beat fast and breathe hard for <b>at least 60 minutes</b>?<sup>17</sup> <ul style="list-style-type: none"> <li>○ <i>Responses: 0-7 days</i></li> </ul> </li> </ul>

<sup>16</sup> USDA <http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/measurement.aspx#survey>

<sup>17</sup> Adapted from: California Youth Nutrition and Physical Activity Survey Grades 4–8 <http://www.cdph.ca.gov/programs/cpns/Pages/Chapter1RequiredSurveysforImpactOutcomeEvaluation.aspx>



Outcome	Measure
Decreased time being sedentary	<ul style="list-style-type: none"> <li>• During the past week, on how many days did your child do sports, dance or play games in which he/she was very active (playing hard, running, jumping, throwing)?               <ul style="list-style-type: none"> <li>○ Responses 0-7 days</li> </ul> </li> <li>• During the past week, on how many days did your child take part in physical activity that made his/her heart beat fast and breathe hard for <b>at least 30 minutes</b>?               <ul style="list-style-type: none"> <li>○ Responses: 0-7 days</li> </ul> </li> <li>• On <b>a typical school day</b>, about how much time does your child spend sitting and watching TV or videos, playing video games or on a computer, phone or tablet for something other than school work?<sup>18</sup> <ul style="list-style-type: none"> <li>○ Responses: Less than 1 hour per day, 1 hour per day, 2 hours per day, 3 hours per day, 4 hours per day, 5 or more hours per day, my child does not watch TV, play video games, or use a computer for something that is not for school work on school days</li> </ul> </li> </ul>
<b>R10: Family Meals</b>	
Changes in frequencies of family meals	<ul style="list-style-type: none"> <li>• During the last week, on how many days did you and your child sit down to eat dinner together?               <ul style="list-style-type: none"> <li>○ Responses: 0-7 days</li> </ul> </li> </ul>

## Sample and recruitment

### SAMPLE

The intervention group comprises children enrolled in grades pre-kindergarten through fifth grade in New York City (NYC) whose schools were new to CookShop in the 2015-2016 or the 2016-2017 school year. Students from demographically similar schools on the wait list to receive CookShop comprise the comparison group. There were a total of 23 CookShop schools and 5 comparison schools enrolled in the study, for a total of 604 baseline parent respondents. The number of respondents and response rates at each time point are shown in Exhibit II-2.

The response rate for the initial surveys was 9% in CookShop schools and 6% in the comparison schools, which is lower than the anticipated 25%. The follow-up response rate for this study (21% on average in both CookShop and comparison schools) was much lower than what has been achieved in other SNAP-Education studies<sup>19</sup> (77-85%) and a previous study of CookShop (60%). In the SNAP-Education studies, follow-up surveys were mailed as in this study, however, telephone follow up was also conducted to bolster response. Although telephone follow-up was not feasible for this study, follow-up via email and text message was conducted, where possible. Aware that recruitment in NYC schools can be challenging, follow-up response rates were projected at 50%, however, response still fell short of this mark.

Notably, a difference in response to the follow-up surveys was observed between grade levels in CookShop schools: there was a higher response rate among grades 3 through 5 (28% - 36%) than among grades pre-K to 2 (18% - 20%). This difference may be attributed to the different timing of the completion of the program, causing the pre-K through second grade parents to receive surveys at the very end of

<sup>18</sup> Supplemental Nutrition Assistance Program Education and Evaluation Study (Wave II). (2013). Retrieved from: <https://fns-prod.azureedge.net/sites/default/files/SNAPedWavell.pdf>

<sup>19</sup> *ibid*



the school year and into the summer, while grades 3-5 received the follow-up surveys in February and March 2017. (See Exhibit II-2.)

**Exhibit II-3. Respondents by time, group and grade level.**

		Baseline		1st follow-up		2nd follow-up	
		N	Response rate	N	Response rate	N	Response rate
<b>Intervention</b>	<b>TOTAL</b>	<b>356</b>	<b>9%</b>	<b>85</b>	<b>24%</b>	<b>73</b>	<b>21%</b>
	Grades pre-k-2	239	--	47	20%	43	18%
	Grades 3-5	102	--	37	36%	29	28%
<b>Comparison</b>	<b>TOTAL</b>	<b>248</b>	<b>6%</b>	<b>44</b>	<b>18%</b>	<b>52</b>	<b>21%</b>
	Grades pre-k-2	155	--	31	20%	35	23%
	Grades 3-5	76	--	13	17%	17	22%

Note: Cannot calculate baseline response rate by grade.

Using data from a previous SNAP-Ed study<sup>20</sup> and fruit and vegetable consumption as the main outcomes, a final total sample size of 91 per intervention group was expected to measure differences between CookShop and comparison students with a significance level of 0.05 and 80% power. Despite efforts to improve the response rates, the numbers were less than expected, however, there was still sufficient power to detect several statistical differences between the CookShop and comparison children.

**RECRUITMENT AND RETENTION**

In October 2016, Food Bank announced the study to schools newly enrolled in CookShop as well as those returning for a second year (n=24) and invited schools on the waitlist participate in the study as comparison schools (n=26). Comparison schools were offered a non-SNAP-Ed funded partnership opportunity with Food Bank for their participation, which could include a one-day volunteer project for the school or a free service or product for parents (e.g., milk vouchers, tax-preparation assistance, one-time produce or hygiene product distribution, or a financial management workshop). Principals who gave consent for their school to participate in the CookShop evaluation received English and Spanish parental information packets to be distributed by the school to the classrooms. The packets included an introduction letter, consent form, participant contact card form, a baseline survey, and stamped and addressed envelope for participants to return surveys and contact information directly to Altarum. Participants who completed a baseline survey received a \$10 gift certificate to Easy Market stores. Over 8,500 packets were distributed in December 2016 to schools for recruitment of parents into the study. To boost response rates, flyers were sent to all CookShop and comparison schools in February 2017, which included a web address with the option to complete an online survey. For all of the respondents who completed a baseline survey, two follow-up surveys were sent directly to them via their preferred method (mail, email or text). A pre-survey note was sent to let them know the survey would be arriving soon. For completion of the follow-up surveys, parents received \$15 gift certificates to Easy Market. Multiple reminders were sent to parents via their preferred method to complete the survey. To increase response rates of the pre-K through second grade participants, the second follow-up survey was mailed

<sup>20</sup> FNS, Office of Policy Support (2013) *Models of Supplemental Nutrition Assistance Program Education and Evaluation, Wave II*. Retrieved from: <https://idph.iowa.gov/Portals/1/Files/INN/SNAPEdWaveII.pdf>.



to homes a second time in August 2017.

## Data collection

Surveys were distributed to students in participating classrooms in December of 2016—prior to implementing CookShop in the intervention schools—to take home to their parents. Surveys were mailed back to Altarum in self-addressed stamped envelopes included with the initial packet of information. The option to complete a web-based survey was also provided via a flyer distributed to classrooms in February 2017. There were two follow-up surveys, 1-week post CookShop completion and 6-weeks post-completion. The actual dates for the distribution of the follow-up surveys varied based on the grade level due to differing program implementation schedules for grades pre-K-2 and 3-5. The pre-K through second grade parents were sent the 1-week follow-up surveys in June 2017 and the second follow-up survey in July 2017 and the parents for third through fifth graders received surveys in February and March 2017. Surveys could be completed on paper or online.

## B. PROCESS EVALUATION

The process evaluation captured information about CookShop implementation in select schools, from the initial stages of school enrollment and planning through the implementation of interventions. The specific objectives of the process evaluation were to:

1. Determine the extent to which CookShop is implemented as intended (assess program fidelity);
2. Identify factors (facilitators) that contribute to successful implementation, including policy, systems and environmental changes that support healthy eating and physical activity as well as school support and champions;
3. Examine the extent to which challenges interfered with successful implementation; and
4. Ascertain if any of these facilitators and/or challenges affected the overall impact of the program relative to its stated goals and objectives.

## Outcomes and measures

To address the process evaluation objectives, key informant interviews, teacher surveys and observations of teacher training sessions and classroom interventions were conducted. Exhibit II-3 summarizes outcomes, measures and data sources for the CookShop process evaluation. Respondent recruitment and sampling are described in the next section.

**Exhibit II-4. Environmental settings indicators from SNAP-Ed evaluation framework and related outcomes and measures from the CookShop evaluation.**

Indicator	Measures	Data source
School environment for healthy eating and physical activity <i>(ST5: Readiness and Need)</i>	<ul style="list-style-type: none"> <li>• Presence of a needs assessment</li> <li>• Other nutrition/physical education programs in the school</li> <li>• Policies, practices or structures encouraging healthy eating or physical activity</li> </ul>	<ul style="list-style-type: none"> <li>• Food Bank staff interviews</li> <li>• Review of internal Food Bank data</li> <li>• School administration and CookShop Coordinator interviews</li> </ul>
Presence of nutrition and physical activity champion <i>(ST6: Champion)</i>	<ul style="list-style-type: none"> <li>• Number of champions in school and school community</li> <li>• Roles (e.g., youth, staff, parent, local celebrity, community leader)</li> <li>• Accomplishments related to nutrition and physical activity</li> </ul>	<ul style="list-style-type: none"> <li>• Food Bank interviews</li> <li>• School administration and CookShop Coordinator interviews</li> <li>• Teacher interviews</li> </ul>



Indicator	Measures	Data source
School support for CookShop	<ul style="list-style-type: none"> <li>• Support from administrative staff to teachers implementing the program</li> <li>• Successes and challenges encountered during implementation</li> <li>• Presence of marketing supporting program</li> <li>• Dissemination of information to parents</li> <li>• Adoption of CookShop themes into other curricula</li> <li>• Satisfaction with CookShop Coordinator</li> <li>• Coordination with and support received from CookShop Coordinator</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher interviews</li> <li>• School administration and CookShop Coordinator interviews</li> <li>• Classroom observations</li> </ul>
Community support for CookShop	<ul style="list-style-type: none"> <li>• Participation by parents in CF</li> <li>• Utilization of CookShop parent materials and resources</li> </ul>	<ul style="list-style-type: none"> <li>• Food Bank staff interviews</li> <li>• Review of internal Food Bank data</li> </ul>
Perceived success of CookShop	<ul style="list-style-type: none"> <li>• Self-efficacy to implement the program</li> <li>• Perceived success with integrating program into school day</li> <li>• Perceived success with influencing students' nutrition and physical activity choices outside the classroom</li> <li>• Perceived student satisfaction and engagement in CookShop</li> <li>• Satisfaction with the level of training provided</li> <li>• Satisfaction with the support and technical assistance provided from school administration</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher surveys</li> <li>• Teacher interviews</li> </ul>
Program implementation fidelity	<ul style="list-style-type: none"> <li>• Comparison of curriculum provided by Food Bank to actual implementation in the classroom</li> <li>• Timeline consistent with planned curriculum</li> <li>• Themes and lessons consistent with planned curriculum</li> <li>• Challenges/barriers to implementation</li> </ul>	<ul style="list-style-type: none"> <li>• Observation of teacher training</li> <li>• Classroom observation</li> <li>• Food Bank staff interviews</li> <li>• School administration and CookShop Coordinator interviews</li> <li>• Teacher interviews</li> </ul>
Technical assistance provided to schools from Food Bank	<ul style="list-style-type: none"> <li>• Satisfaction with the support and technical assistance provided from Food Bank to teachers and school administration</li> <li>• Challenges with support and technical assistance provided by Food Bank</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher surveys</li> <li>• Teacher interviews</li> <li>• School administration and CookShop Coordinator interviews</li> </ul>



Indicator	Measures	Data source
Program effectiveness	<ul style="list-style-type: none"> <li>• Receipt of necessary materials and resources to implement CookShop</li> <li>• Perceived success of program for primary and secondary outcomes</li> <li>• Description of the factors that facilitate improved health outcomes/highest perceived success               <ul style="list-style-type: none"> <li>○ <i>Parent involvement in CookShop</i></li> <li>○ <i>Marketing campaigns</i></li> <li>○ <i>Program fidelity</i></li> <li>○ <i>Participation in staff training</i></li> <li>○ <i>School champion</i></li> <li>○ <i>PSE changes present</i></li> <li>○ <i>Teacher self-efficacy</i></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Impact evaluation</li> <li>• Food Bank staff interviews</li> <li>• School administration and CookShop Coordinator interviews</li> <li>• Teacher interviews</li> <li>• Review of Food Bank internal data</li> </ul>

## Sample and Recruitment

To address the process evaluation aims, numerous key informant interviews, teacher surveys, and teacher training and CookShop lesson observations were conducted. Key informants included Food Bank staff and school administrators and personnel involved in CookShop implementation. However, similar to the impact evaluation, only schools whose principals opted into the study were eligible to participate in the process evaluation. A total of 23 CookShop schools (intervention) and 5 comparison schools opted into the study. Sampling and recruitment approaches varied by data collection mode.

### FULL SAMPLE

- ▲ Principals from all intervention and comparison schools were invited via email to participate in a pre-implementation telephone interview. Telephone follow-up was conducted to enhance recruitment.
- ▲ Teachers from all CookShop classrooms (intervention schools only) were invited via email to participate in both a pre- or early-implementation online survey and a late- or post-implementation online survey. An introductory email contained information about the study and what their participation would entail as well as the potential risks and benefits associated with participation. A second email contained instructions on how to consent and participate in the online survey.

### SITE VISIT SAMPLE

- ▲ Principals from 12 intervention schools were asked to consent to an onsite visit. Schools were selected to ensure that each grade (K-5) and NYC borough was represented in the sample. Some consideration was also given to the proximity of CookShop schools to ensure that multiple schools could be visited within in a one-week period. Consent was required before Altarum staff members could enter schools. However, explicit informed consent was still requested from each respondent interviewed or observed during the visit.
- ▲ Principals and CookShop Coordinators from schools that consented to an onsite visit were invited to participate in an in-person interview.
- ▲ Teachers from 2-3 CookShop classrooms within each site visit school were invited to participate in an in-person interview and asked for permission to observe their delivery of a CookShop



lesson. Classroom selection was based largely on the CookShop lesson schedule for the week of the visit. Every effort was made to observe a variety of CookShop lessons and interview teachers from each grade.

All respondents who agreed to participate in any form of data collection provided their explicit informed consent.

## Data collection

Exhibit II-4 summarizes the number and types of respondents by data collection mode.

### Exhibit II-5. Number and types of respondents by data collection mode.

Timeframe	Type of Data Collection	Number of Respondents
<b>In-depth Interviews</b>		
Food Bank For New York City	Group phone interview <ul style="list-style-type: none"> <li>The interview was recorded with permission of all participants and detailed notes were taken during the interview</li> <li>Duration: 1 hour, 51 minutes</li> </ul>	<ul style="list-style-type: none"> <li>4 program managers</li> <li>2 persons responsible for selecting CookShop schools</li> <li>2 persons responsible for conducting teacher training</li> </ul>
CookShop (Intervention) Schools	Phone interview (pre-/early-implementation) <ul style="list-style-type: none"> <li>Interviews were recorded and transcribed</li> <li>Approximate Duration: 30 minutes</li> </ul>	<ul style="list-style-type: none"> <li>20 school administrators*</li> </ul>
	Onsite interview <ul style="list-style-type: none"> <li>Interviews were recorded and transcribed</li> <li>Approximate Duration <ul style="list-style-type: none"> <li>Administrators: 15 minutes</li> <li>CookShop Coordinators: 30 minutes</li> <li>Teachers: 30 minutes</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>11 school administrators</li> <li>12 CookShop Coordinators</li> <li>26 classroom teachers (2-3 per site visit school)</li> </ul>
Comparison Schools	Phone interview (pre-/early-implementation of CookShop in intervention schools) <ul style="list-style-type: none"> <li>Interviews were recorded and transcribed</li> <li>Approximate Duration: 30 minutes</li> </ul>	<ul style="list-style-type: none"> <li>5 school administrators</li> </ul>
<b>Observations</b>		
CookShop Teacher Training	Direct observation on October 22, 2016 <ul style="list-style-type: none"> <li>Notes were taken during observation</li> </ul>	
CookShop Classroom Observations	Direct observation of CookShop classrooms/lessons during onsite visits <ul style="list-style-type: none"> <li>Observations were conducted using Classroom Observation Guide</li> <li>Teachers participated in a post-observation interview lasting approximately 5 minutes</li> </ul>	<ul style="list-style-type: none"> <li>29 classrooms (1 pre-K, 5 Kindergarten, 9 first grade, 2 second grade, 3 third grade, 7 fourth grade, 7 fifth grade)</li> </ul> <i>Some classrooms had more than one grade level of students (e.g., 4<sup>th</sup> and 5<sup>th</sup> grade)</i>
<b>Surveys</b>		
CookShop Classroom Teacher	Online survey (pre/early-implementation)	<ul style="list-style-type: none"> <li>88 teachers</li> </ul>
	Online survey (late/post-implementation)	<ul style="list-style-type: none"> <li>34 teachers</li> </ul>

\*1 principal was interviewed who works with 2 CookShop schools; 1 CookShop school administrator was not interviewed.

## C. ANALYSIS APPROACH

A mixed method analysis approach was used to examine all aspects of the CookShop evaluation. A description of this analysis is provided below.



## Process evaluation data analysis

Interview responses from key informants, including Food Bank staff, school administrators and classroom teachers, were entered into NVivo version 11 and organized by broad process evaluation research questions and process indicators. This helped to organize an extensive amount of interview data and allow for the identification of broad themes and specific topics as well as agreement and disagreement among respondents. Direct quotations are identified where relevant and used to support key findings.

Data from the teacher surveys were downloaded as an Excel file from the online web survey host and inspected for consistency, missing values and values outside of the expected ranges. Clean datasets were created and analyzed in SAS Software for Windows Version 9.3 to produce descriptive statistics at each time point and examine change over time using paired t-tests or tests for agreement, where relevant.

## Outcome data management and analysis

Paper parent surveys were completed via a ScanTron form, which was scanned and an Excel file created with the responses. Online survey data were collected using Lime Survey Software and data were downloaded and combined with paper responses to create a complete data file. All parent survey data were inspected for consistency, missing values and values outside of the expected ranges. In some cases, parents responded to both a web and paper survey, in which case only the earliest response was kept for analysis.

A food security category measure was calculated according to the USDA Economic Research Service guidelines for the Six-Item Food Security Scale<sup>21</sup> comprising the following categories: high/marginal food security, low food security, and very low food security as described in the measures outlined in the Outcomes and Measures section and Exhibit II-3. The definitions of each category are as follows:

- ▲ **High food security**—Households had no problems or anxiety about consistently accessing adequate food.
- ▲ **Marginal food security**—Households had problems at times or anxiety about accessing adequate food, but the quality, variety and quantity of their food intake were not substantially reduced.
- ▲ **Low food security**—Households reduced the quality, variety and desirability of their diets, but the quantity of food intake and normal eating patterns were not substantially disrupted.
- ▲ **Very low food security**—At times during the year, eating patterns of one or more household members were disrupted and food intake reduced because the household lacked money and other resources for food.

High and marginal food security were combined into one level on the recommendation of the guidelines because a large proportion of households that would be measured as having marginal food security using the household or adult scale would have had raw score zero on the six-item scale. Additionally, a dichotomous variable was derived indicating that those with low or very low food security are considered to be ‘food insecure.’

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<sup>21</sup> Economic Research Service. *Six-Item Short Form of the Food Security Survey Module*. Retrieved from: <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/survey-tools/>



Descriptive statistics at baseline for the full baseline sample and for those responding to each of the follow-up surveys produced and compared between the CookShop and comparison students. These statistics determined if there were differences between the two groups that need to be accounted for in the change over time analysis.

Outcomes were examined cross-sectionally and compared between the groups at both follow-up time points to determine where the intervention may have had the strongest impact. To determine the impact of the intervention on behavioral change over time, while controlling for demographic factors related to the outcomes, repeated measures modeling was conducted with both fixed and random effects. Data management and analysis were conducted using IBM SPSS version 25 software and SAS Software for Windows, version 9.4.

## IV. Impact Evaluation Findings

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The impact evaluation surveyed and examined data from CookShop and comparison group parents or caregivers at three points in time: pre-implementation, 1-week post-intervention and 6-weeks post-intervention. All baseline respondents were sent surveys for both follow-up time periods. A change over time analysis was conducted within 3 samples: those responding to the 1-week survey, 6-week survey and both the 1-week and 6-week surveys.

### A. DESCRIPTION OF THE SAMPLE RESPONDENTS

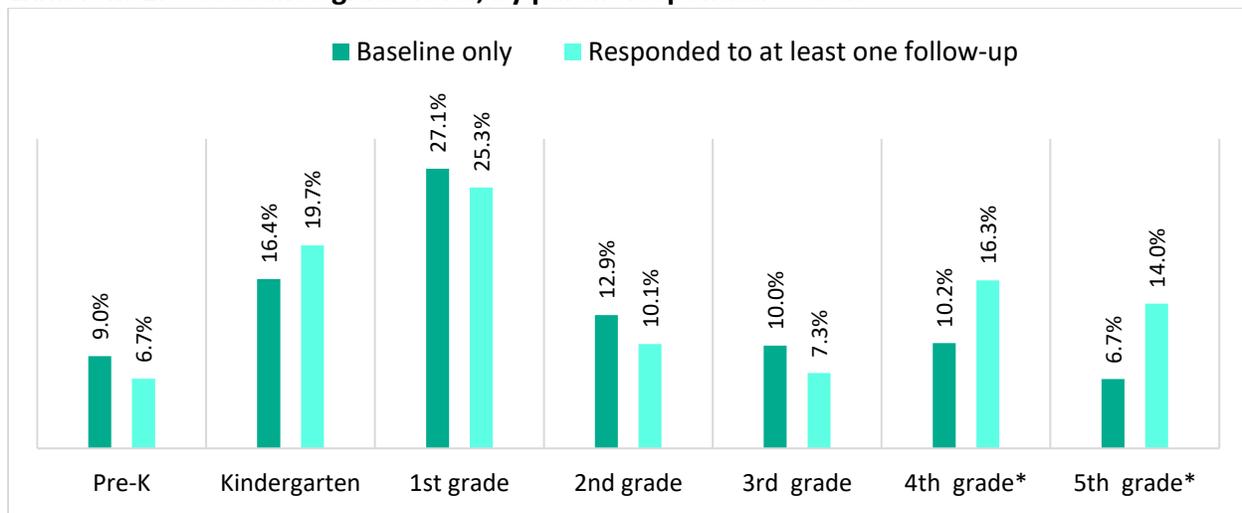
There were 580 respondents to the baseline survey, comprising 342 CookShop parents and 238 comparison group parents. A total of 128 parents responded to the 1-week follow-up survey and 124 parents responded to the 6-week follow-up survey; 75 parents responded to both follow-up surveys.

#### Demographic characteristics of follow-up respondents versus baseline only respondents

A majority of parent respondents completed only the baseline CookShop survey (n=402); the remaining 178 parents responded to the baseline survey and at least one of the two follow-up surveys. Appendix I shows the demographic characteristics of follow-up respondents versus baseline only respondents overall and by intervention group. There were significant differences between follow-up respondents and baseline only respondents, including child's grade, food security status, program participation, number of people living in the household, and race. Follow-up respondents were more likely than baseline only respondents to have only one adult in the household, 23% versus 15%, respectively. Overall, a majority of respondents indicated that they had students in pre-Kindergarten through second grade, which was expected since most first year CookShop schools opted to implement the program in the lower grades. As shown in Exhibit III-1, parents who responded to at least one of the follow-up surveys were significantly more likely to have a 4<sup>th</sup> or 5<sup>th</sup> grade student, 16% and 14%, respectively, compared to parents who responded only to the baseline survey (10% had 4<sup>th</sup> graders and 7% had 5<sup>th</sup> graders).



### Exhibit III-1. Student's grade level, by parent respondent status



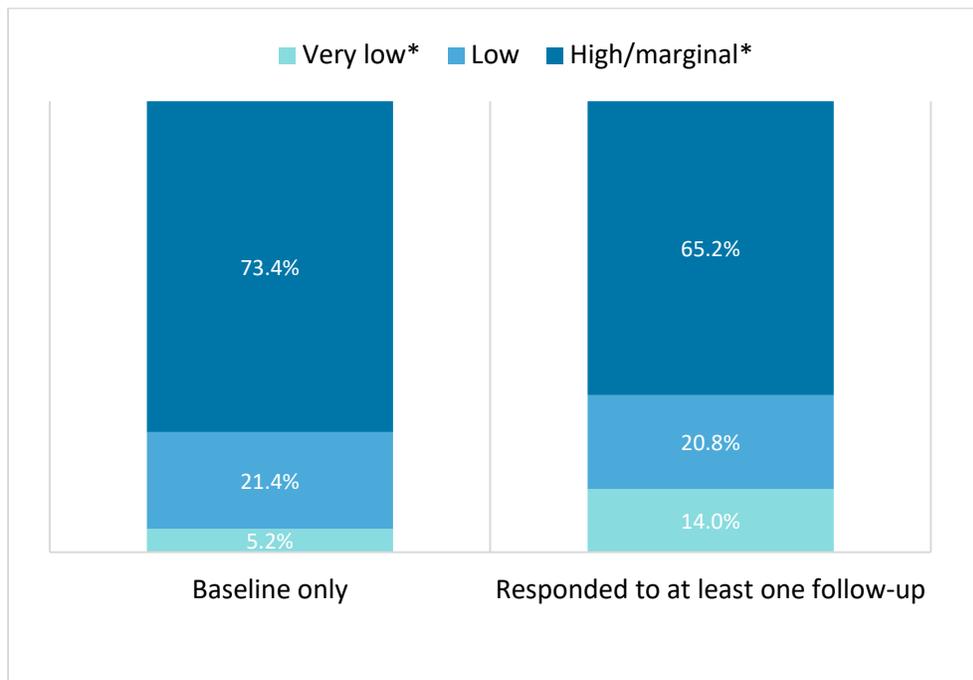
\*Indicates proportions significantly different ( $\alpha < 0.05$ ) between follow-up and baseline only respondent groups using a z-test with a Bonferroni adjustment for multiple comparisons.

The majority of surveyed parents were identified as living in a household that has “high/marginal” food security, which is defined as: “Household had no problems, or anxiety about, consistently accessing adequate food” or “Household had problems at times, or anxiety about, accessing adequate food, but the quality, variety, and quantity of their food intake were not substantially reduced;”<sup>22</sup> however, baseline food security differed somewhat between follow-up respondents and baseline only respondents. Follow-up respondents were more likely than baseline only respondents to have very low food security, 14% versus 5% (Exhibit III-2).

<sup>22</sup> USDA. *What is Food Security?* Retrieved from: <http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/measurement.aspx#survey>



**Exhibit III-2. Baseline food security status, by parent respondent status**

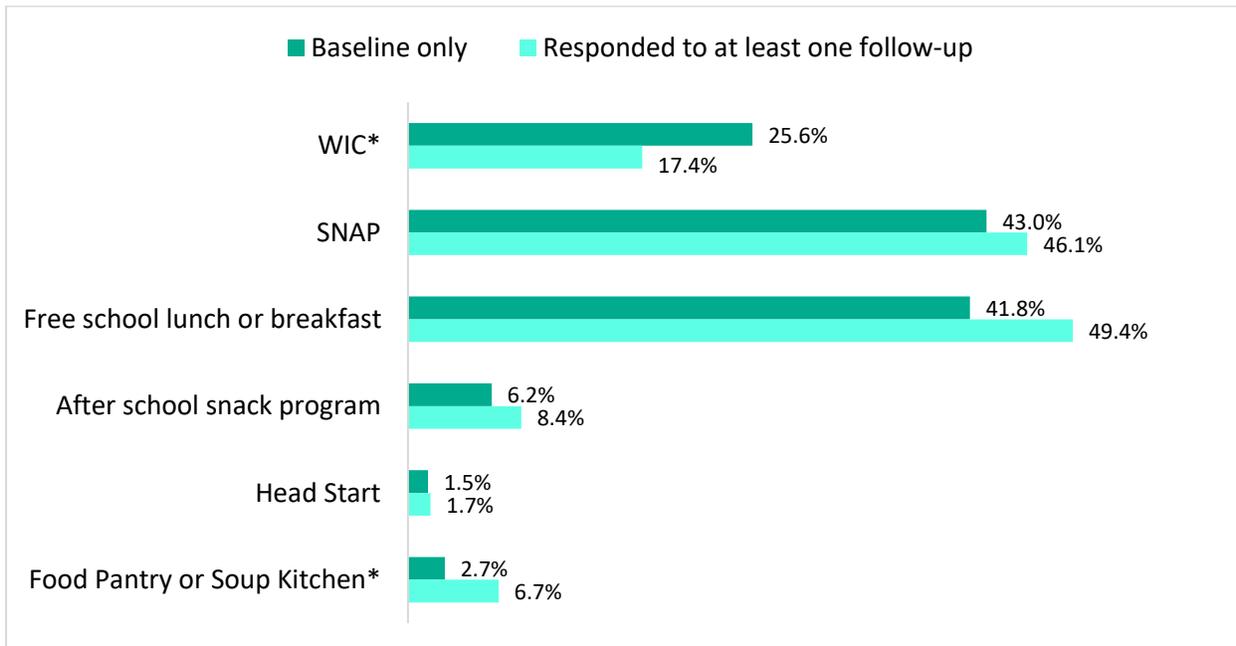


*\*Indicates proportions significantly different ( $\alpha < 0.05$ ) between follow-up and baseline only respondent groups using a z-test with a Bonferroni adjustment for multiple comparisons.*

Overall, many surveyed parents indicated that someone in their household participates in one or more assistance programs, and most frequently cited were WIC, SNAP and free school lunch or school breakfast programs (Exhibit III-3). Participation in assistance programs varied slightly between follow-up respondents and baseline only respondents with follow-up respondents being less likely than baseline only respondents to participate in WIC and more likely to utilize a food pantry or soup kitchen. Because follow-up respondents tended to have older children than baseline only respondents, it is unsurprising that they were less likely to participate in WIC, which serves only pregnant, postpartum and breastfeeding women and children under the age of five. Additionally, because follow-up respondents reported higher rates of food insecurity, it is unsurprising that they also reported higher rates of emergency food utilization as food pantries and soup kitchens can help fill gaps in household resources.



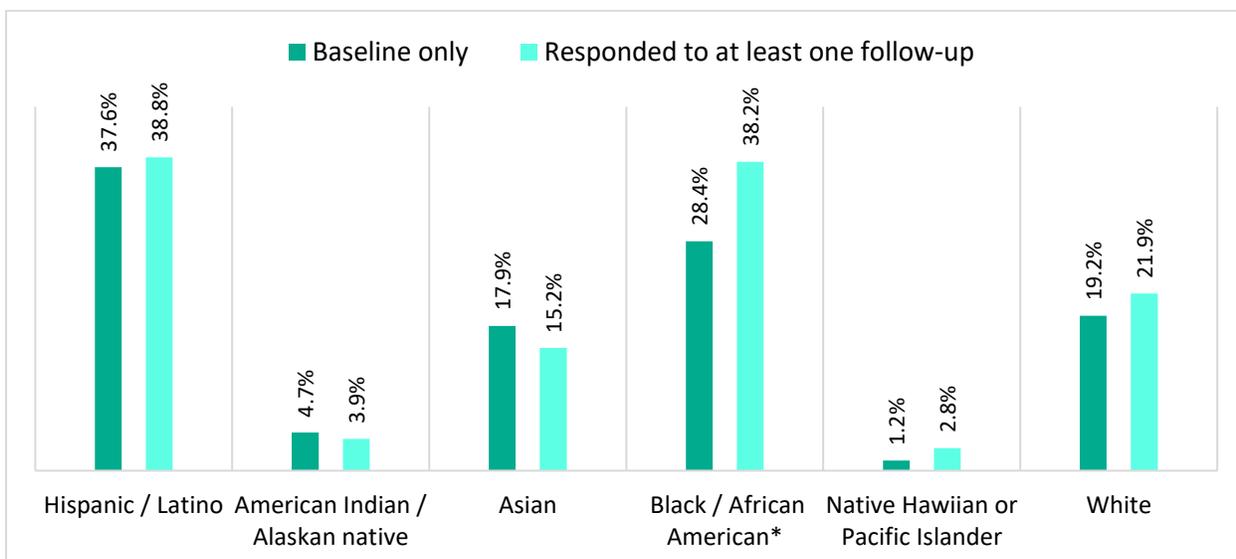
### Exhibit III-3. Baseline program participation in the last 30 days, by parent respondent status



\*Indicates proportions significantly different ( $\alpha < 0.05$ ) between follow-up and baseline only respondent groups using a z-test with a Bonferroni adjustment for multiple comparisons.

As illustrated in Exhibit III-4, the race and ethnicity of follow-up and baseline only respondents were very similar. Nearly 40% of respondents identified as Hispanic or Latino, while about 20% identified as White and 15-20% as Asian. Follow-up respondents were significantly more likely than baseline only respondents to identify as Black or African American (38.2% compared to 28.4%, respectively.)

### Exhibit III-4. Baseline race and ethnicity,<sup>a</sup> by parent respondent status



<sup>a</sup> Percentages do not add to 100% because respondents were able to check all applicable races/ethnicities.

\*Indicates proportions significantly different ( $\alpha < 0.05$ ) between follow-up and baseline only respondent groups using a z-test with a Bonferroni adjustment for multiple comparisons.



## Demographic differences between CookShop and comparison children

The impact evaluation compared knowledge and behavior change over time between CookShop students and comparison school students. For this reason, only responses from parents who completed both the baseline and at least one follow-up survey are included in the change over time analysis. Prior to conducting the change over time analysis, however, the baseline characteristics of CookShop and comparison school follow-up respondent groups were compared and a few significant differences were identified, including student grade level, baseline food security status and race. Specifically, there were significantly more third graders, households with very low food security and fewer Asian respondents in the CookShop group than in the comparison group. To reduce the potential for bias in the study results, these three characteristics were controlled for in the change over time analysis. (See Appendix I for full results)

### B. INDIVIDUAL-LEVEL BEHAVIOR CHANGE: HEALTHY EATING (MT1)

The primary focus of CookShop is to improve eating behaviors among school children and their families. The CookShop evaluation measured several outcomes related to healthy eating behavior, including frequency and variety of fruit and vegetable consumption and consumption of sugar-sweetened beverages, whole grains and lower fat milk and dairy products. Differences in outcomes between CookShop and comparison students were analyzed separately at each time point (unadjusted cross-sectional analysis) and over time (longitudinal analysis), adjusting for grade level, race, ethnicity, and baseline food security status. Appendix II displays the full results for the healthy eating outcomes.

#### KEY FINDINGS:

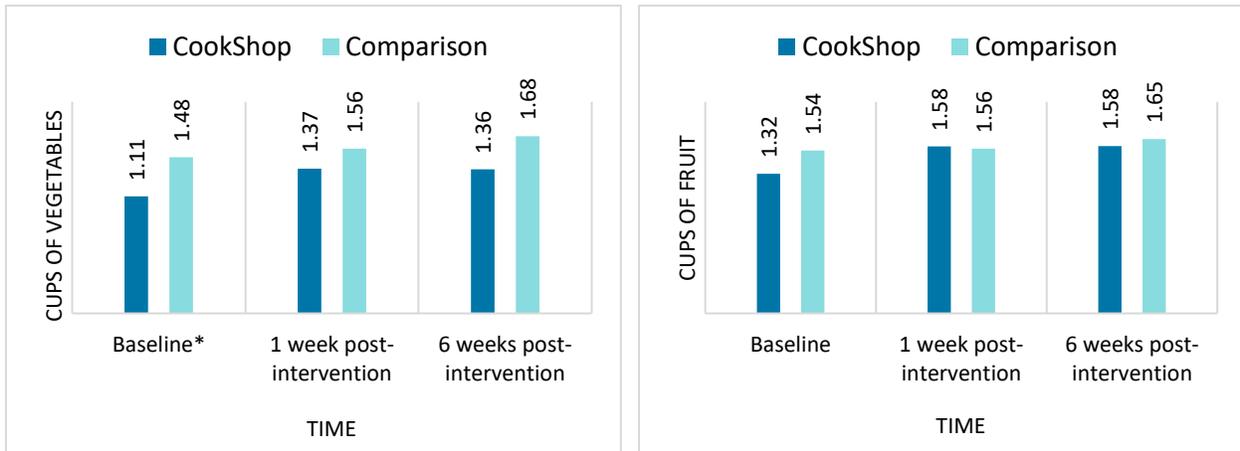
- CookShop children increased their **willingness to try new fruits and vegetables** *significantly* more than comparison children after participation in the program.
- **Sugar-sweetened beverage** consumption decreased *significantly* more in CookShop children than in comparison children pre-implementation to 1 week post-intervention.
- **Whole grain** consumption increased *significantly* more in CookShop children than in comparison children from pre-implementation to 1 week post-intervention.
- **Cups of fruit and vegetables** consumed on a typical day increased in CookShop children after participation in the program.

## Fruit and vegetable consumption

Quantity, frequency and variety of fruit and vegetable consumption were evaluated at both baseline and follow-up. As described in Exhibit III-5, cups of fruit and vegetables consumed on a typical day increased among both CookShop and comparison school children. Notably, comparison school children consumed significantly more vegetables than CookShop children pre-intervention; however, after participating in the program, CookShop and comparison school children consumed similar amounts of vegetables. Regression models were used to compare change over time (from baseline to 1-week and 6-weeks post-intervention) between the CookShop and comparison groups; controlling for demographic characteristics confirmed that, although fruit and vegetable consumption increased significantly overall, significant differences were not observed between CookShop and comparison children.



### Exhibit III-5. Fruit and vegetable consumption on a typical day, by group and time



Baseline comprises only those respondents with at least one follow-up.

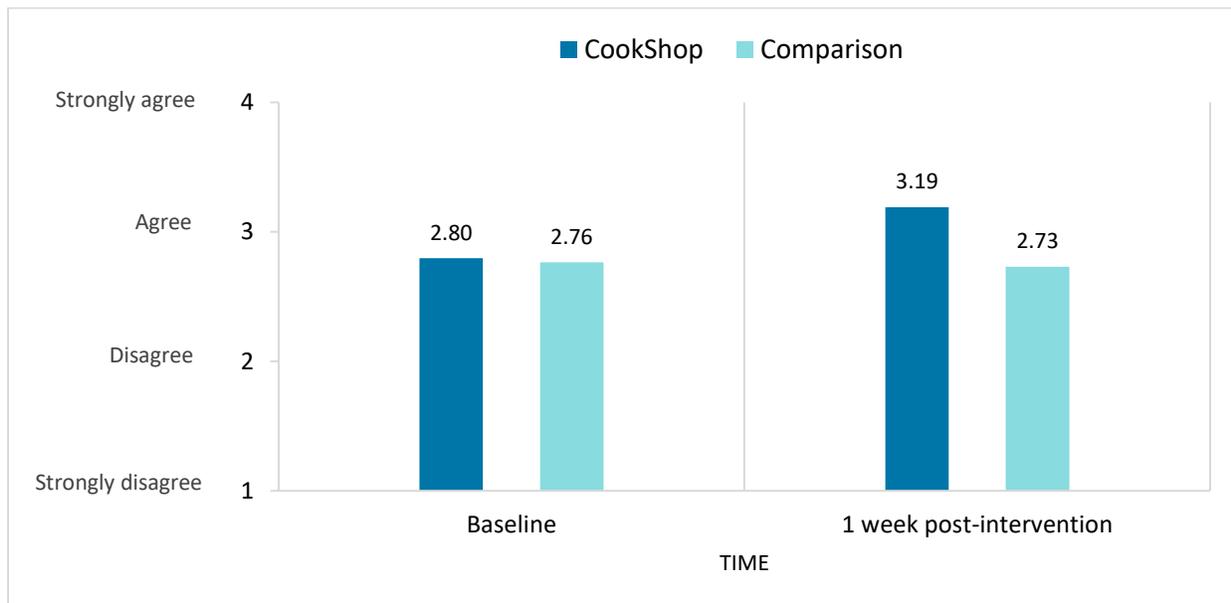
\*Indicates proportions significantly different ( $\alpha < 0.05$ ) between CookShop and comparison groups using a t-test to compare means.

At baseline, parents served their children fruit with dinner or as a dessert about 2 days per week and served vegetables with dinner about 3 days per week. These outcomes were higher on average in the comparison group than in the CookShop group, particularly at 6-weeks post-intervention where the differences were significant. Further, based on the longitudinal analysis, which controlled for demographic characteristics, the adjusted mean for the number of days fruit and vegetables were served with dinner decreased among the CookShop groups and increased among the comparison group. Similar results were observed relative to children eating more than one type of fruit or vegetable each day, with all participants reporting on average that children eat more than one type of fruit or vegetable about 2.5 days per week pre-intervention, which decreased among CookShop children and increased among comparison children over time.

In longitudinal models controlling for demographic factors, children participating in CookShop significantly increased their average willingness to try new fruits and vegetables from pre-intervention to 1-week post-intervention, while comparison children stayed about the same. However, these changes were not sustained; at 6-weeks post-intervention, CookShop children's willingness to try new fruits and vegetables was similar to baseline levels. Exhibits III-6 and III-7 illustrates model results for parent agreement that the child is willing to try a new fruit and vegetable from pre- to 1-week post-intervention.



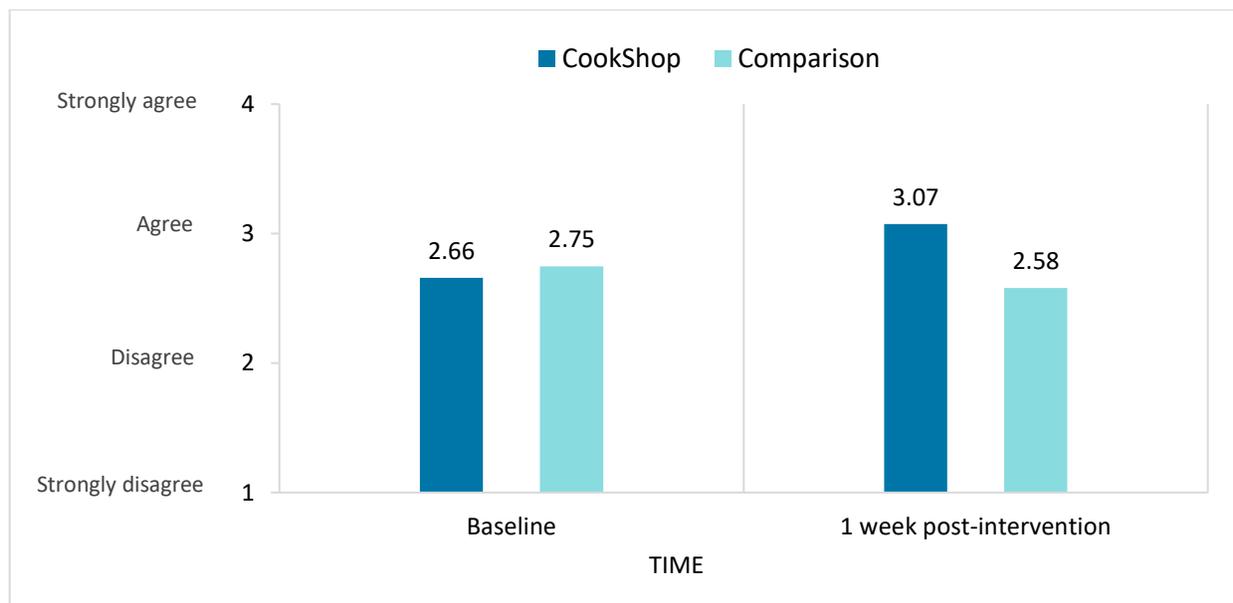
**Exhibit III-6. Adjusted mean willingness to try new fruits from baseline to 1-week post-intervention between CookShop and comparison children\***



*\*Means from a longitudinal regression model with fixed and random effects, adjusted for child's grade, race, ethnicity, and baseline food security status.*

*Difference between CookShop and comparison children is significant at the  $\alpha=0.05$  level.*

**Exhibit III-7. Adjusted mean willingness to try new vegetables from baseline to 1-week post-intervention between CookShop and comparison children\***



*\*Means from a longitudinal regression model with fixed and random effects, adjusted for child's grade, race, ethnicity, and baseline food security status.*

*Difference between CookShop and comparison children is significant at the  $\alpha=0.05$  level.*



## Sugar-sweetened beverages (SSB)

Parents reported on how often their child drank an SSB (e.g., soda, sports drink, Kool-Aid, energy drinks, lemonade, sweetened tea) and water in the past week with the following response options: never or less than 1 per week, 1 per week, 2-4 per week, 5-6 per week, 1 per day, 2-3 per day, 4 or more per day.

Before CookShop, 50% of children in CookShop schools were drinking 2 or more SSBs per week.

Immediately following the intervention, consumption decreased (only 36.6% of CookShop children were still consuming 2 or more SSBs per week), and in models controlling for demographic factors, CookShop children improved significantly more than comparison children ( $p < 0.001$ ), as shown in Exhibit III-8 and III-9.

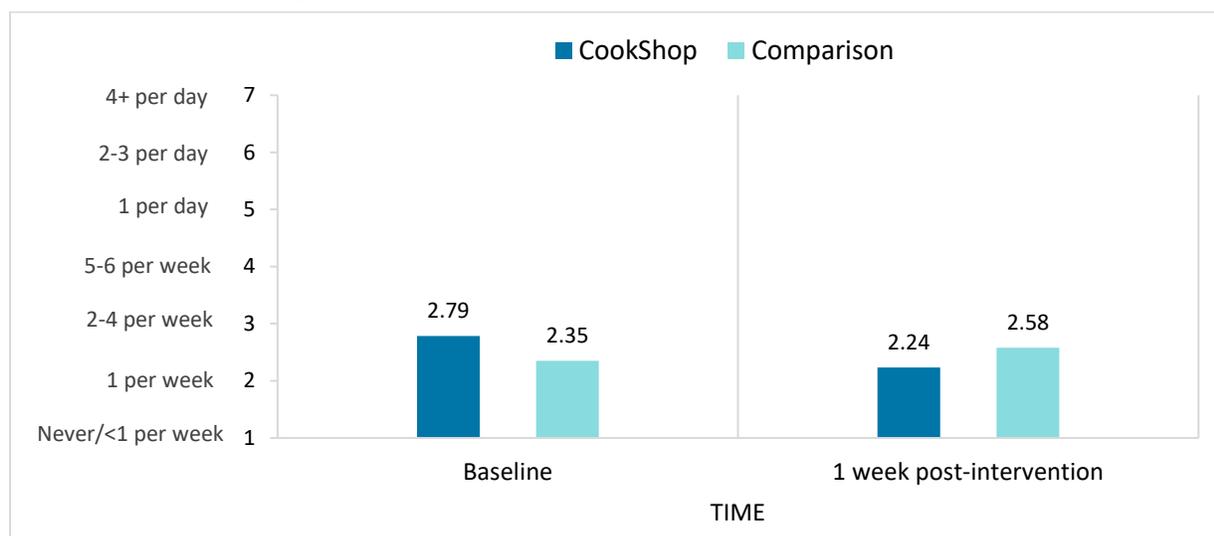
Over 75% of children were drinking water on a daily basis before CookShop. Although slight increases were observed at both follow-up time points, the change over time in CookShop children was not significantly different from that of comparison children.

**Exhibit III-8. SSB and water consumption, by group and time**

	Baseline				1 week post-intervention				6 weeks post-intervention			
	CookShop n=114		Comparison n=64		CookShop n=85		Comparison n=43		CookShop n=73		Comparison n=51	
	N	%	N	%	N	%	N	%	N	%	N	%
During the past week, how often did your child drink a sugar sweetened beverage?												
Never / less than 1	24	21.1	22	34.4	26	30.6	13	30.2	22	30.1	12	23.5
1 per week	29	25.4	13	20.3	28	32.9	9	20.9	16	21.9	11	21.6
2-4 per week	31	27.2	19	29.7	17	20.0	9	20.9	22	30.1	16	31.4
5-6 per week	9	7.9	3	4.7	5	5.9	4	9.3	5	6.8	6	11.8
1 per day	6	5.3	2	3.1	6	7.1	3	7.0	1	1.4	2	3.9
2-3 per day	8	7.0	2	3.1	2	2.4	3	7.0	3	4.1	2	3.9
4+ per day	4	3.5	1	1.6	1	1.2	1	2.3	4	5.5	1	2.0
During the past week, how often did your child drink a bottle or glass of plain water?												
Never / less than 1	2	1.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
1 per week	2	1.8	1	1.6	2	2.4	0	0.0	1	1.4	0	0.0
2-4 per week	11	9.6	8	12.5	12	14.1	5	11.6	8	11.0	5	9.8
5-6 per week	11	9.6	6	9.4	4	4.7	6	14.0	5	6.8	6	11.8
1 per day	11	9.6	6	9.4	7	8.2	5	11.6	5	6.8	4	7.8
2-3 per day	38	33.3	17	26.6	30	35.3	17	39.5	26	35.6	18	35.3
4+ per day	38	33.3	25	39.1	30	35.3	10	23.3	28	38.4	17	33.3



**Exhibit III-9. Adjusted mean SSB consumption from baseline to 1-week post-intervention between CookShop and comparison children\***



\*Means from a longitudinal regression model with fixed and random effects, adjusted for child’s grade, race, ethnicity, and baseline food security status. Difference between CookShop and comparison children is significant at the  $\alpha=0.05$  level.

**Whole grains**

The percentage of CookShop parents reporting that their child eats whole grain products most or all of the time increased from 43% at baseline to about 46% at 1 week post-intervention. Conversely, 50% of comparison school children were eating whole grains at baseline according to their parents, while only 40% were doing so at the time of the 1-week follow-up. Exhibit III-10 outlines the mean change over time in the percentage of children eating whole grain products most or all of the time was significantly different between CookShop and comparison school children after controlling for demographic characteristics ( $p=0.02$ ). CookShop had an immediate effect on whole grain consumption; however, the change did not appear to be maintained at 6 weeks post-intervention. In fact, according to their parents, CookShop children were consuming whole grains less frequently at 6 weeks post-intervention than they were at baseline.

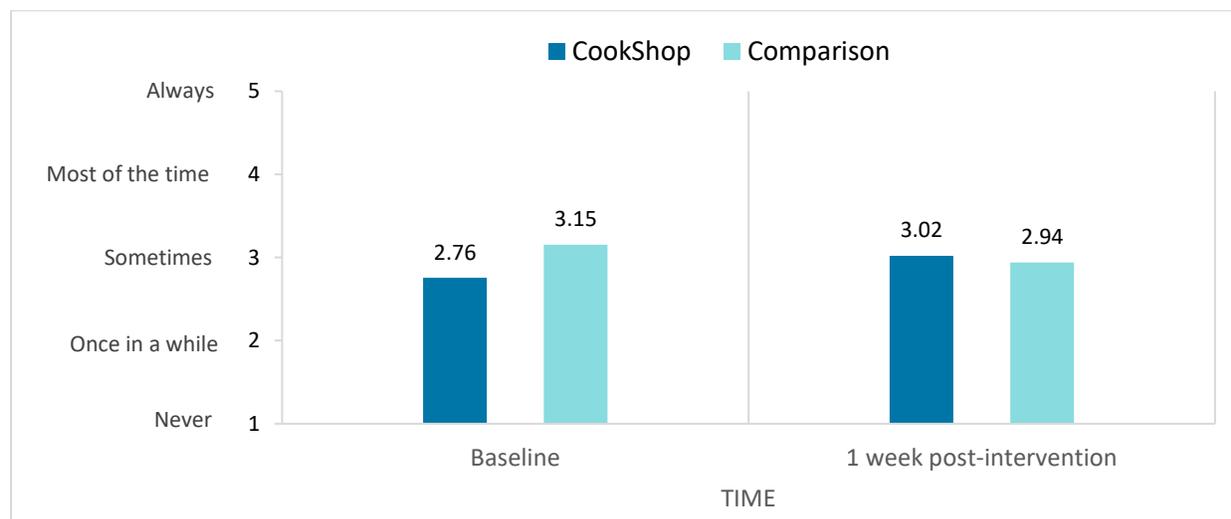
**Exhibit III-10. Whole grain consumption, by group and time**

	Baseline				1 week post-intervention				6 weeks post-intervention			
	CookShop n=114		Comparison n=64		CookShop n=85		Comparison n=43		CookShop n=73		Comparison n=51	
	N	%	N	%	N	%	N	%	N	%	N	%
When your child eats grain products, how often does he/she eat whole grains												
Never	8	7.0	0	0.0	3	3.5	3	7.0	3	4.1	3	5.9
Once in a while	22	19.3	13	20.3	19	22.4	5	11.6	21	28.8	9	17.6
Sometimes	33	28.9	17	26.6	23	27.1	21	48.8	19	26.0	16	31.4



	Baseline				1 week post-intervention				6 weeks post-intervention			
	N	%	N	%	N	%	N	%	N	%	N	%
Most of the time	36	31.6	21	32.8	25	29.4	10	23.3	19	26.0	14	27.5
Always	13	11.4	11	17.2	14	16.5	3	7.0	9	12.3	8	15.7

**Exhibit III-11. Adjusted mean whole grain consumption from baseline to 1 week post-intervention between CookShop and comparison children\***



\*Means from a longitudinal regression model with fixed and random effects, adjusted for child's grade, race, ethnicity, and baseline food security status.

Difference between CookShop and comparison children is significant at the  $\alpha=0.05$  level.

### Low-fat/fat-free milk and dairy products

At baseline, about 47% of CookShop children were drinking non-fat or low-fat milk most or all of the time. This percentage increased after participating in CookShop to about 49% (1-week post-intervention), but then decreased to approximately 45% at the 6-week follow-up. About 56% of comparison children were drinking non-fat or low-fat milk most or all of the time at baseline; this level of consumption was maintained to the 1-week follow-up and then decreased slightly to 49% by the 6 week follow-up. No significant differences in change over time were detected between the groups after adjusting for demographic characteristics. At baseline, 36% of CookShop children and 41% of comparison children ate non-fat or low-fat dairy products most or all of the time and consumption decreased or remained the same over time for both groups as shown in Exhibit III-12.

**Exhibit III-12. Non-fat and low-fat milk and dairy product consumption, by group and time**

	Baseline				1 week post-intervention				6 weeks post-intervention			
	CookShop		Comparison		CookShop		Comparison		CookShop		Comparison	
	N	%	N	%	N	%	N	%	N	%	N	%
When your child has milk, how often does he/she drink non-fat, skim, low fat or 1% milk?												



	Baseline				1 week post-intervention				6 weeks post-intervention			
Never	12	10.5	8	12.5	10	11.8	4	9.3	7	9.6	9	17.6
Once in a while	21	18.4	2	3.1	17	20.0	3	7.0	17	23.3	4	7.8
Sometimes	20	17.5	16	25.0	12	14.1	12	27.9	14	19.2	12	23.5
Most of the time	22	19.3	13	20.3	17	20.0	13	30.2	15	20.5	10	19.6
Always	31	27.2	23	35.9	25	29.4	11	25.6	18	24.7	15	29.4
When your child eats dairy products how often does he/she eat low fat or fat-free options?												
Never	11	9.6	11	17.2	6	7.1	3	7.0	7	9.6	11	21.6
Once in a while	20	17.5	10	15.6	25	29.4	6	14.0	20	27.4	6	11.8
Sometimes	38	33.3	13	20.3	25	29.4	16	37.2	20	27.4	15	29.4
Most of the time	22	19.3	12	18.8	14	16.5	12	27.9	14	19.2	9	17.6
Always	20	17.5	14	21.9	12	14.1	5	11.6	11	15.1	9	17.6

## Healthier snacking

Parents gave their child fruit for a snack approximately 3 days per week on average at baseline. The number of days per week that parents gave their child fruit for a snack decreased slightly over time among the CookShop group and increased among the comparison group. The number of days parents gave their child vegetables for a snack was less than 1.5 on average at baseline; this number decreased by 1-week follow-up but then increased to almost 1.8 days per week by 6-weeks post-intervention. The number of days parents in the comparison group gave their child vegetables for a snack increased over time, up to almost 2 days per week by the 6 week follow-up (Exhibit III-13). However, there were no significant differences in change over time between the groups after adjusting for demographic characteristics.

**Exhibit III-13. Healthy snacking behavior, by group and time**

	Baseline			1 week post-intervention			6 weeks post-intervention			
	N	Mean	SE	N	Mean	SE	N	Mean	SE	
<i>During the past week, on how many days</i>										
Did you give your child fruit for a snack?										
CookShop	109	2.82	0.20	83	2.70	0.22	72	2.43	0.21	
Comparison	62	3.02	0.28	43	3.14	0.31	50	3.10	0.31	
p-value		0.561			0.251			0.067		
Did you give your child a vegetable for a snack?										
CookShop	110	1.39	0.17	81	1.30	0.21	68	1.79	0.22	
Comparison	61	1.34	0.24	42	1.64	0.28	51	1.94	0.22	
p-value		0.871			0.324			0.648		



## C. INDIVIDUAL-LEVEL BEHAVIOR CHANGE: FOOD RESOURCE MANAGEMENT (MT2)

CookShop serves low-income communities where information about shopping for healthy food on a budget is very important and helpful. As such, food security status, access to healthy food and knowledge about shopping for healthy food on a budget were evaluated. Many of these outcomes are related more to parent behavior than the behavior of children participating in CookShop; however, influence of the program beyond the classroom is an important consideration. Differences in outcomes related to food resource management between CookShop and comparison children were analyzed at each time point separately (cross-sectional analysis) and over time (longitudinal analysis) adjusting for demographic characteristics, including grade level, race, ethnicity, baseline food security status (for shopping behaviors), and participation in CF (for shopping behaviors). Appendix III displays the full results for food resource management outcomes.

### KEY FINDINGS:

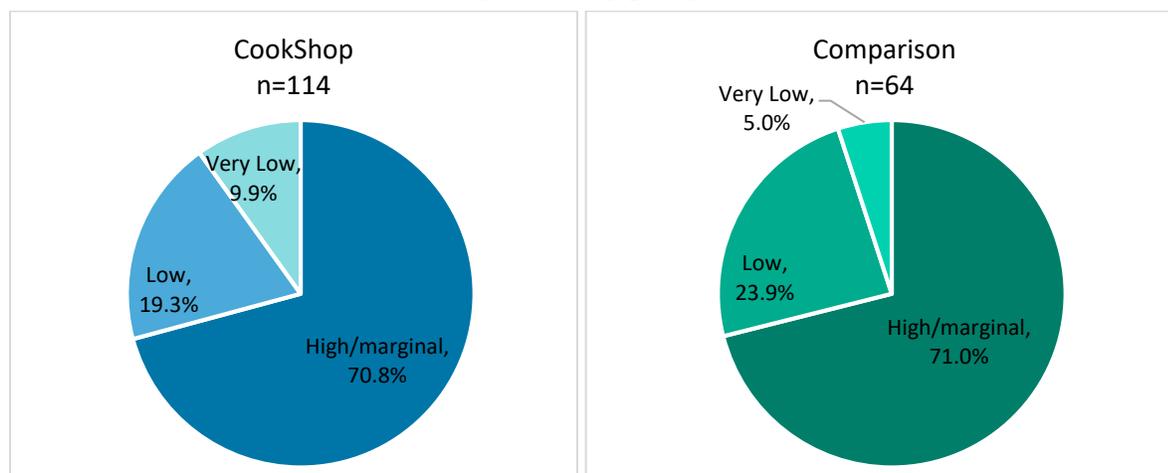
- Communities served by CookShop have higher rates of food insecurity than the U.S. or New York State populations as a whole.
- Children asking parents to buy a certain type of fruit or vegetable increased consistently after participating in CookShop.

### Food security status

Exhibit III-14 illustrates that about 71% of baseline parent respondents indicated that they had high or marginal food security status over the past 30 days, which means they had no or only one or two reported indications of food access problems or limitations. CookShop children were more likely than comparison school children at baseline to be in households with very low food security, meaning they had multiple indications of disrupted eating patterns and reduced food intake.



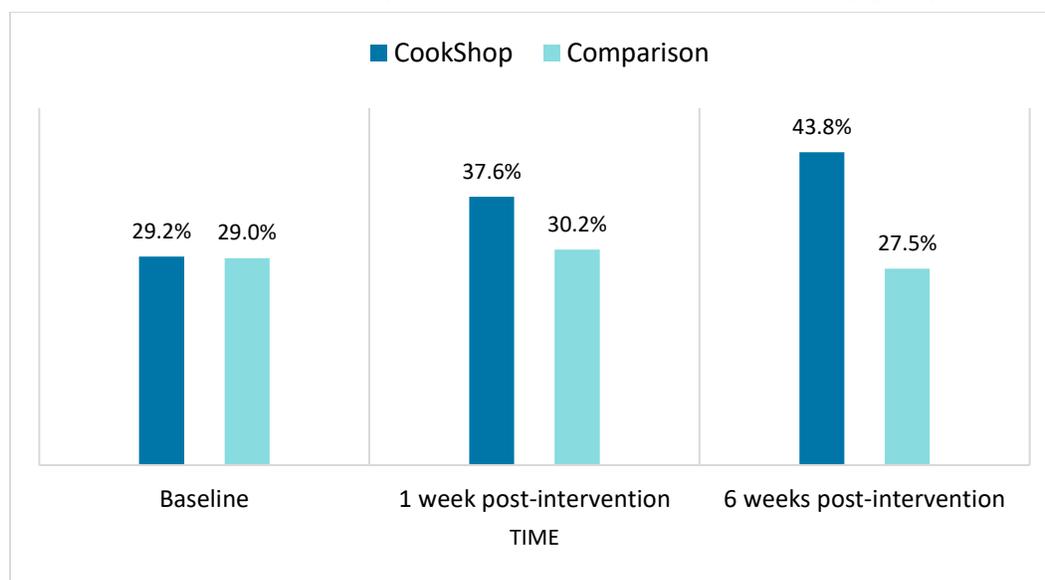
**Exhibit III-14. Baseline food security status by group**



Households with low or very low food security status are considered “food insecure.” In Altarum’s sample, about 30% of households qualified as food insecure, which is considerably higher than the estimated 12% of American households or the 12.5% of New York State households that were food insecure at some point in 2016.<sup>23</sup> The percentage of parents reporting food insecurity remained steady over time in the comparison group households but increased over time to nearly 44% at 6-week post intervention among CookShop households, as shown in Exhibit III-15. These findings certainly demonstrate a high-level of need in the communities served by CookShop for information on how to shop and buy healthy food on a budget.

Food security status is a complicated issue, influenced by many factors that cannot all be addressed by CookShop. Some of these factors are discussed in the conclusions and limitations sections later in the report.

**Exhibit III-15. Percent of respondents who are food insecure, by group and time.**



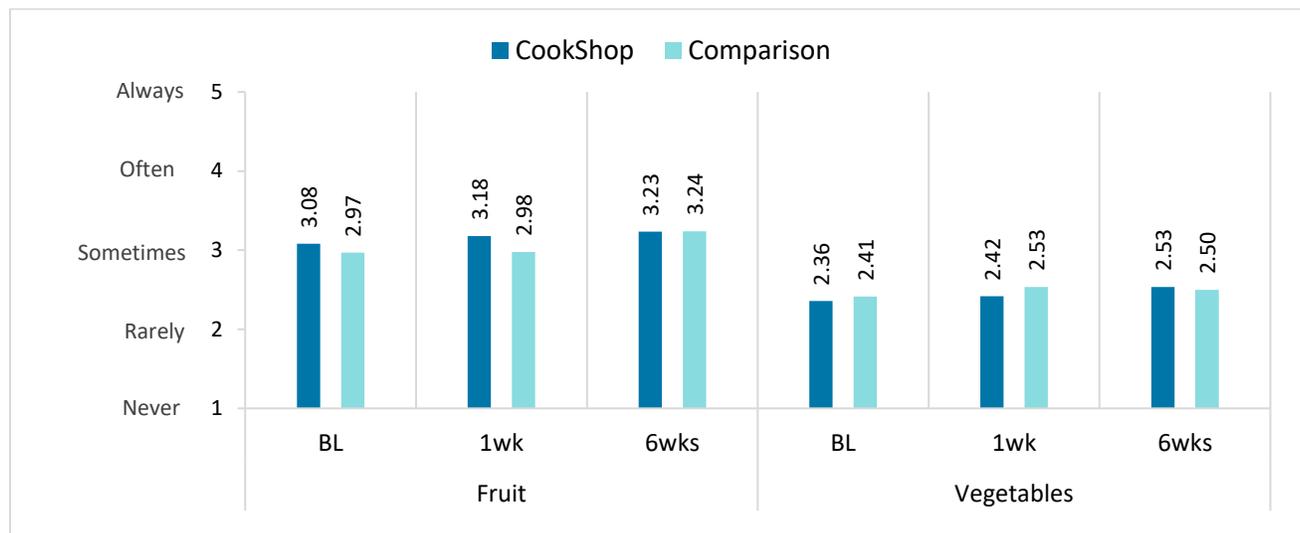
<sup>23</sup> Economic Research Service. (2017). *Household Food Security in the United States in 2016*. Retrieved from: <https://www.ers.usda.gov/publications/pub-details/?pubid=84972>.



## Helpful shopping practices

Parents were asked how often in the past 30 days their child asked them to purchase a certain type of fruit or vegetable and were able to respond with always, often, sometimes, rarely or never. The responses were scored on a scale of 1 to 5 (1=Never and 5=Always). Exhibit III-16 illustrates that, on average, the frequency with which children asked their parents to purchase a certain type of fruit or vegetable increased steadily over time for both fruit and vegetables among CookShop respondents; however, this change was not significantly different than the change observed among comparison group respondents after controlling for demographic factors.

**Exhibit III-16. Frequency with which child asks parent to purchase a certain kind of fruit or vegetable, by group and time**



Additionally, parents reported on their level of agreement with statements about shopping for fresh food where they live and on a budget. The overwhelming majority of parents in both the CookShop and comparison groups agreed or strongly agreed that they know how to select fresh fruits and vegetables for their families on a budget; these percentages remained consistent over time (>95%). Most respondents also agreed or strongly agreed that they can afford fruits and vegetables where they shop for food. Still, about 14% of CookShop respondents and 13% of comparison group respondents disagreed that they could afford fresh food at baseline; this percentage increased over time in both groups to more than 20% by 6 weeks post-intervention. The majority of respondents also agreed or strongly agreed that they have access to a variety of fruits and vegetables where they shop. However, about one third of respondents agreed or strongly agreed that they do not buy fresh fruits and vegetables because they spoil quickly.



**Exhibit III-17. Parent shopping practices, by group and time**

	Baseline				1 week post-intervention				6 weeks post-intervention			
	CookShop		Comparison		CookShop		Comparison		CookShop		Comparison	
	n=114		n=64		n=85		n=43		n=73		n=51	
	N	%	N	%	N	%	N	%	N	%	N	%
<b>I know how to select fresh fruits and vegetables when I shop for my family.</b>												
Strongly Disagree	1	0.9	1	1.6	1	1.2	0	0.0	0	0.0	1	2.0
Disagree	1	0.9	1	1.6	1	1.2	1	2.3	1	1.4	1	2.0
Agree	48	42.1	16	25.0	42	49.4	15	34.9	36	49.3	21	41.2
Strongly agree	63	55.3	45	70.3	40	47.1	27	62.8	36	49.3	27	52.9
<b>I can afford fruits or vegetables in the store where I shop for most of my food.</b>												
Strongly Disagree	3	2.6	3	4.7	3	3.5	1	2.3	0	0.0	3	5.9
Disagree	13	11.4	5	7.8	13	15.3	7	16.3	19	26.0	9	17.6
Agree	68	59.6	30	46.9	47	55.3	19	44.2	32	43.8	25	49.0
Strongly agree	27	23.7	25	39.1	21	24.7	15	34.9	22	30.1	12	23.5
<b>There is a large selection of fresh fruits or vegetables available where I live.</b>												
Strongly Disagree	1	0.9	1	1.6	1	1.2	0	0.0	2	2.7	2	3.9
Disagree	11	9.6	3	4.7	11	12.9	3	7.0	14	19.2	4	7.8
Agree	52	45.6	28	43.8	41	48.2	16	37.2	32	43.8	21	41.2
Strongly agree	48	42.1	30	46.9	31	36.5	24	55.8	25	34.2	23	45.1
<b>I do not usually buy fresh fruits or vegetables because they spoil quickly.</b>												
Strongly Disagree	19	16.7	24	37.5	15	17.6	14	32.6	10	13.7	17	33.3
Disagree	59	51.8	30	46.9	47	55.3	21	48.8	37	50.7	20	39.2
Agree	27	23.7	8	12.5	16	18.8	4	9.3	20	27.4	8	15.7
Strongly agree	8	7.0	1	1.6	5	5.9	3	7.0	6	8.2	4	7.8



## D. INDIVIDUAL-LEVEL BEHAVIOR CHANGE: PHYSICAL ACTIVITY AND REDUCED SEDENTARY BEHAVIOR (MT3)

Although CookShop’s main focus is on healthy eating, its classroom lessons include a physical activity component. Physical activity and sedentary behavior-related outcomes were analyzed and compared between CookShop and comparison children at each time point separately (cross-sectional analysis) and over time (longitudinal analysis) adjusting for demographic characteristics, including grade level, race, ethnicity, and baseline food security status. Appendix IV displays the full results for physical activity and reduced sedentary behavior outcomes.

### KEY FINDINGS:

- CookShop children **reduced screen time *significantly*** more than comparison children during the study period.
- CookShop children engaged in at least **30 minutes of physical activity on *significantly*** more days than comparison children 1 week post-intervention.

### Physical activity

In the 2008 Physical Activity for Guidelines by the U.S. Department of Health and Services, 60 minutes of vigorous physical activity each day is recommended for school-aged children.<sup>24</sup> Parents were asked to report on the number of days per week that their child participated in 60 minutes of physical activity. However, to ensure that different levels of activity were also measured, parents were also asked to report on the number of days per week that their child participated in 30 minutes of physical activity and the number of days per week that their child participated in sports, dance or other very active play. Exhibit III-18 presents the mean number of days for which each activity was conducted at each time point. In both groups, parents reported higher levels of physical activity for their children over time (baseline compared to 1-week post-intervention). CookShop children participated in at least 30 minutes of physical activity on significantly more days per week than comparison school children at 1 week post-intervention (3.75 days versus 2.91 days, p=0.027), as shown in Exhibit III-19. However, after controlling for demographic characteristics, there were no significant differences in change over time between CookShop and comparison school children.

### Exhibit III-18. Physical activity behavior, by group and time

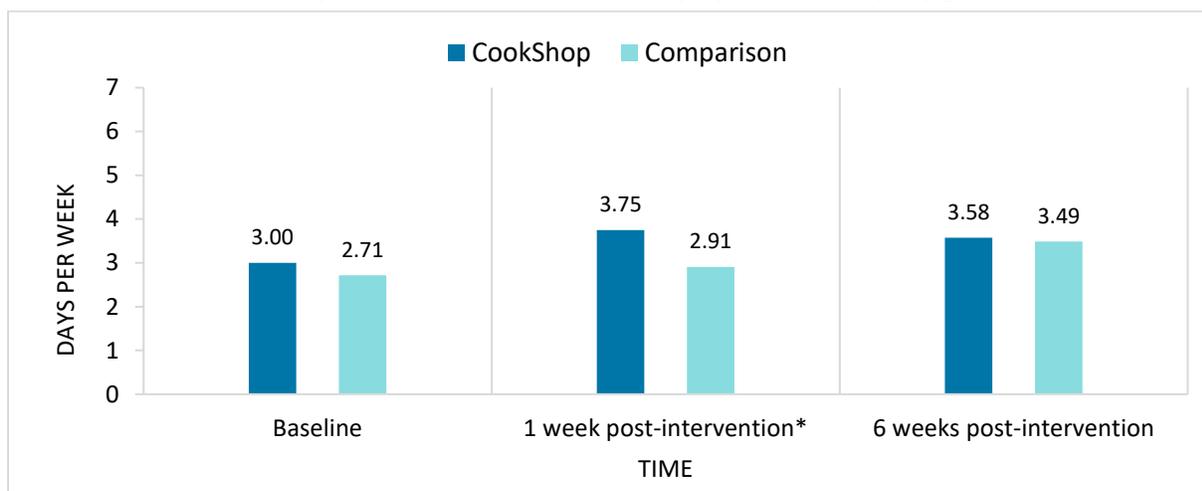
	Baseline			1 week post-intervention			6 weeks post-intervention		
	N	Mean	SE	N	Mean	SE	N	Mean	SE
<b><i>During the past week, on how many days</i></b>									
Did your child do sports, dance or play games in which they were very active?									

<sup>24</sup> U.S. Department of Health and Human Services (2008). *2008 Physical Activity Guidelines for Americans*. Retrieved from <https://health.gov/paguidelines/pdf/paguide.pdf>.



	Baseline			1 week post-intervention			6 weeks post-intervention			
	N	Mean	SE	N	Mean	SE	N	Mean	SE	
CookShop	111	4.11	0.20	84	4.64	0.21	73	4.44	0.22	
Comparison	63	3.63	0.24	43	4.21	0.28	51	4.29	0.25	
p-value		0.140			0.404			0.603		
Did your child take part in physical activity that made his/her heart beat fast and breathe hard for at least 30 minutes?										
CookShop	111	3.00	0.21	84	<b>3.75</b>	0.25	73	3.58	0.25	
Comparison	63	2.71	0.25	43	<b>2.91</b>	0.28	51	3.49	0.29	
p-value		0.227			<b>0.027</b>			0.291		
Did your child take part in physical activity that made his/her heart beat fast and breathe hard for at least 60 minutes?										
CookShop	111	2.04	0.21	84	2.92	0.26	73	2.86	0.27	
Comparison	63	1.86	0.26	43	2.47	0.32	51	2.63	0.29	
p-value		0.667			0.826			0.557		

**Exhibit III-19. Mean days of at least 30 minutes of physical activity, by group and time**



\*Difference between CookShop and comparison children is significantly different at 1-week post-intervention ( $p=0.027$ )

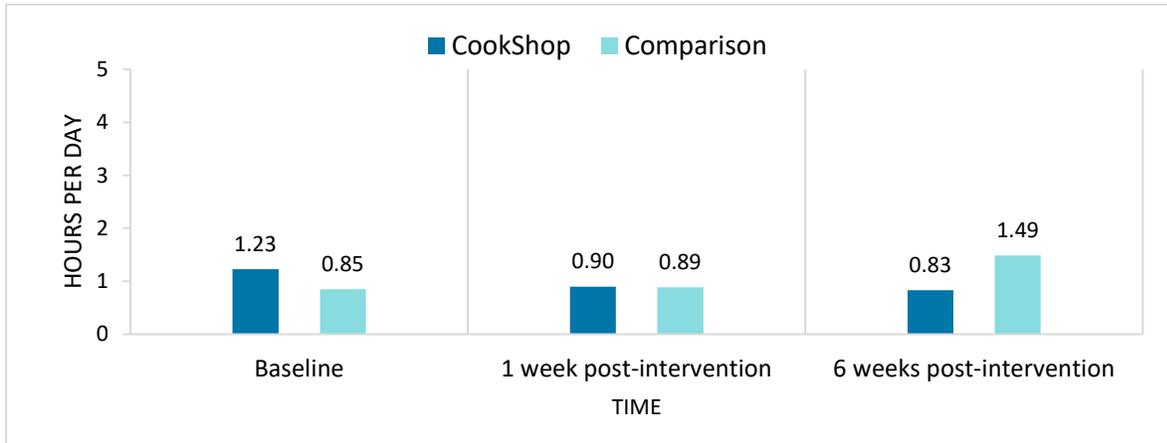
### Time being sedentary

Time being sedentary was measured by the amount of time per day that children spent in front of a screen not for school work, including televisions, computers, phones and tablets. At baseline children in the CookShop group were spending an average of 1.2 hours per day in front of a screen, not for school work, while comparison children spent slightly under 1 hour per day. Over time, however, CookShop



children significantly decreased the average amount of time they spent in front of a screen, and this change was significant when compared to the change observed among comparison school children over time and adjusted for demographic characteristics.

**Exhibit III-20. Adjusted mean time in front of screen not for school work from baseline to 1 week and 6 weeks post-intervention between CookShop and comparison children\***



*\*Means from a longitudinal regression model with fixed and random effects, adjusted for child’s grade, race, ethnicity, and baseline food security status.*

*P-value for difference in the change between CookShop and comparison children at 1-week = 0.003 and at 6 weeks =0.05.*

## E. POPULATION RESULTS: FAMILY MEALS (R10)

Family meals and parental modeling of healthy eating can potentially have a strong influence on the eating behavior of children. Differences in outcomes related to family meals between CookShop and comparison children were analyzed at each time point separately (cross-sectional analysis) and over time (longitudinal analysis) while adjusting for demographic characteristics, including grade level, race, ethnicity, and baseline food security status. Appendix V displays the full results for family meal and parental influence outcomes.

### KEY FINDINGS:

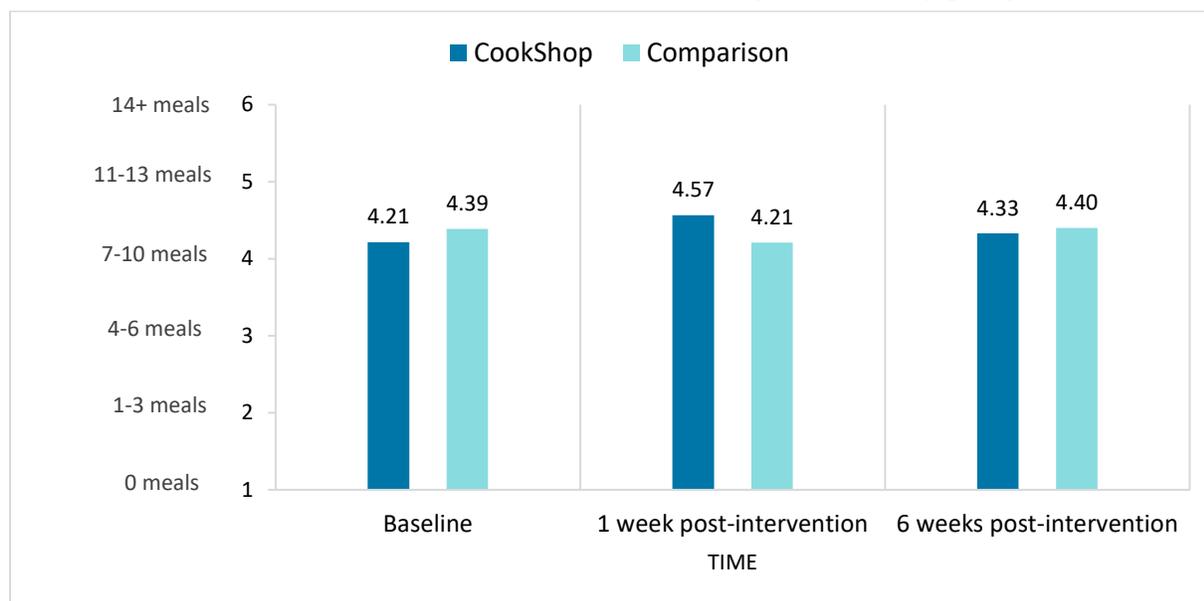
- CookShop children increased the average number of meals eaten at home from baseline to 1 week post-intervention, whereas comparison school children saw a slight decrease.

### Family Meals

Before CookShop, children were eating at least 7-10 meals at home, on average, with over one-third eating 14 or more meals at home. CookShop children increased the average number of meals eaten at home by 1-week post intervention while comparison children declined slightly, although these differences were not significant (see Exhibit III-21 and Appendix V). On average, CookShop parents sat down to eat dinner with their child 5 days a week and this remained fairly consistent during the study period, as presented in Appendix V.



**Exhibit III-21. Number of meals eaten at home over the past week, by group and time**



Parents reported on their own healthy eating behavior, such as how often they eat fruit and vegetables for a snack and with dinner and whether or not they encourage their children to try new fruits and vegetables. The responses remained consistent over time and there were no differences between CookShop and comparison parents. Please refer to Appendix V for full results.

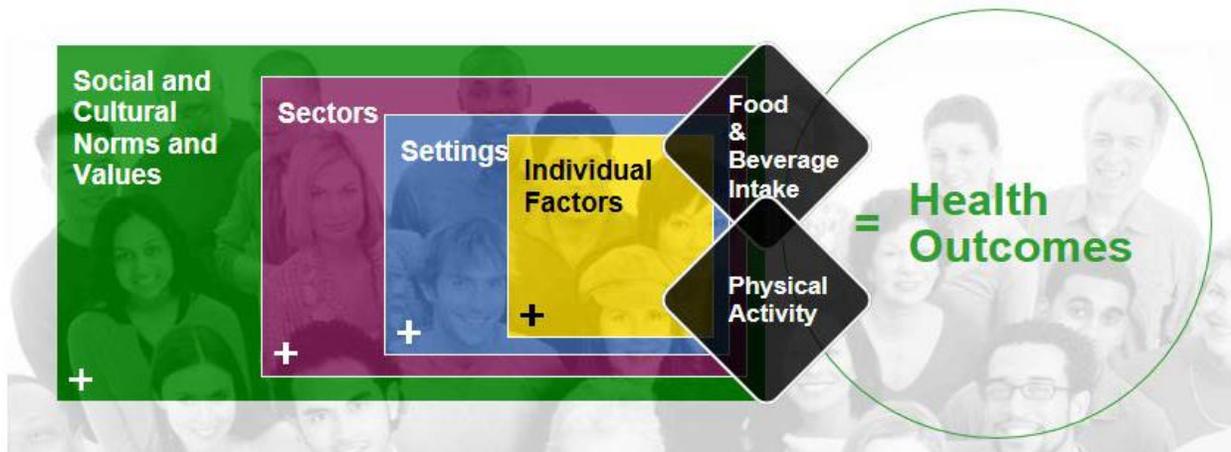
## V. School Environment for Healthy Eating and Physical Activity

SNAP-Ed programming is intended to address multiple levels of the Social-Ecological Model (SEM) (Exhibit IV-1) and underlying factors that contribute to unhealthy eating behaviors, physical inactivity and the consequent negative health outcomes.<sup>25</sup> Interventions with coordinated efforts at multiple levels of the SEM have been demonstrated to be more effective in promoting desired health behaviors and outcomes than single-level interventions, such as direct education. In an effort to make SNAP-Ed programming more aligned with the SEM, Approach 2 of the Food and Nutrition Act dictates that SNAP-Ed programming shall include “comprehensive, multi-level interventions at multiple complementary organizational levels.”

<sup>25</sup> *SNAP-Ed Evaluation Framework Interpretive Guide*. Retrieved from: <https://snaped.fns.usda.gov/sites/default/files/uploads/SNAP-EdEvaluationFrameworkInterpretiveGuide.PDF>



**Exhibit IV-1. A Social-Ecological Model for Food and Physical Activity Behavior**



Source: Figure 3.1 Dietary Guidelines for Americans, 2015–2020. <http://health.gov/dietaryguidelines/2015/guidelines/chapter-3/social-ecological-model/>

The environmental level of the SEM model suggests that the policies, systems and environment (PSE) within an organization can be enhanced to ensure the healthy choice is the easy choice. In schools, examples of PSE changes include healthy snack policies, active wellness committees, time and structures dedicated for physical education and recess, and more. The second chapter of the SNAP-Ed Evaluation Framework Interpretive Guide provides indicators related to enhancing the supportive environment for healthy eating and physical activity, as shown in Exhibit IV-2. Validated measurement tools are included in the Framework and it is suggested that measurements be repeated over time to assess changes that occur within organizations as PSE strategies and other SNAP-Ed programming are implemented.

**Exhibit IV-2. Environmental-Level Indicators of SNAP-Ed Evaluation Framework Interpretive Guide**

	READINESS & CAPACITY SHORT TERM (ST)	CHANGES MEDIUM TERM (MT)	EFFECTIVENESS & MAINTENANCE LONG TERM (LT)
<b>ENVIRONMENTAL SETTINGS</b> EAT, LIVE, WORK, LEARN, SHOP, AND PLAY 	<b>ORGANIZATIONAL MOTIVATORS</b> ST5: Need and Readiness ST6: Champions ST7: Partnerships	<b>ORGANIZATIONAL ADOPTION AND PROMOTION</b> MT5: Nutrition Supports MT6: Physical Activity and Reduced Sedentary Behavior Supports	<b>ORGANIZATIONAL IMPLEMENTATION AND EFFECTIVENESS</b> LT5: Nutrition Supports Implementation LT6: Physical Activity Supports Implementation LT7: Program Recognition LT8: Media Coverage LT9: Leveraged Resources LT10: Planned Sustainability LT11: Unexpected Benefits

CookShop is traditionally a direct education program and mostly targets the individual level of the SEM. Recognizing that the school environment interacts with students’ healthy eating and physical activity behaviors, however, Food Bank is developing robust complementary PSE interventions; this important work was underway at the time of the study. To support Food Bank’s implementation of PSE interventions, an environmental scan was conducted to document and better understand the programs, services and supports already active in CookShop and comparison schools. Information about the school environment was gleaned through pre-implementation interviews with an administrator from each CookShop and comparison school as well as through interviews with CookShop Coordinators



(Coordinators) and teachers and observations conducted at a subset of CookShop schools included in the study.

## A. STUDENT POPULATION

As part of the environmental scan, administrators from all schools were asked to describe the racial, ethnic and socioeconomic characteristics of the students at their school. Consistent with the demographic information provided by parent survey respondents (impact evaluation), administrators across all schools described their student body as being racially and ethnically diverse, comprising African American, Hispanic, Asian, Middle Eastern, and immigrant students, among others. The average attendance rate reported by administrators in evaluation schools (n=26) was approximately 92%, ranging from 83% to 97%. Thirteen of the 26 (46%) interviewed administrators indicated that their school's enrollment has declined, ranging from approximately a 5% to 30% decrease each year, while 12 schools reported that school enrollment has remained stable in recent years. Only one school reported increases in student enrollment.

As stipulated by FNS, schools eligible for SNAP-Education programming, such as CookShop, must have a student population in which 50 percent or more come from families with household incomes less than or equal to 185 percent of the Federal Poverty Line,<sup>26</sup> an income threshold below which students qualify for free or reduced-price school meals.<sup>27</sup> Consistent with this requirement, administrators (n=17) from the evaluation schools shared that between 73% and 100% of their students qualify for the federal program. Nearly half of the 26 interviewed administrators estimated that 30% or more of their students are homeless, live in foster care or are part of a family that “doubles up” on housing with one or more other families. These findings help to demonstrate the socioeconomic vulnerability of students and communities served by CookShop schools and the heightened need to develop a supportive environment for healthy eating and physical activity within schools, homes and communities.

## B. NEEDS ASSESSMENT

Interviewed administrators were asked if a formal needs assessment related to the healthy eating and physical activity environment (e.g., the DOE's School Wellness Scorecard, School Health Index, WellSat or another assessment) had been conducted in their school. Of the 26 administrators interviewed, only 2 reported that their school had conducted a formal needs assessment. While neither administrator was able to describe specific findings of the assessment, one pointed to a healthy snack policy that was implemented as a result of the needs assessment.

It should be noted that many interviewed administrators were unfamiliar with this topic and a document review was not conducted as part of this evaluation, thus presence of a needs assessment may be under reported. Administrator support is essential to assess and change the school environment, and other staff members and external support may be needed to conduct the assessment

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<sup>26</sup> USDA Food and Nutrition Service. (2017). *Supplemental Nutrition Assistance Program Education: Plan Guidance FY 2018*. Retrieved from: <https://snaped.fns.usda.gov/snap/Guidance/FY2018SNAP-EducationPlanGuidance.pdf>

<sup>27</sup> USDA Food and Nutrition Service. (2017). *Child Nutrition Programs: Income Eligibility Guidelines*. (Document No: 2017-07043). Retrieved from: <https://www.federalregister.gov/documents/2017/04/10/2017-07043/child-nutrition-programs-income-eligibility-guidelines>



and craft related policies.

## C. BUILT ENVIRONMENT

The infrastructure available in a school or community, also known as the built environment (e.g., presence of a playground), can support healthy living. Administrators were asked about aspects of the school environment that help facilitate physical activity and healthy eating at school. As shown in IV-3, most schools had a gymnasium, playground (or access to one offsite), cafeteria, and school kitchen. Three schools did not have a cafeteria but had partial kitchens onsite. Pre-K classrooms across NYC public schools provide family-style meals in the classroom rather than the traditional breakfast and lunch served in cafeterias, and therefore do not need or have access to cafeterias.

**Exhibit IV-3. Presence of key elements of the built environment in schools**

School facilities	Number of schools	% of schools
Onsite gymnasium (n=26)	24	92.3
Onsite playground <sup>1</sup> (n=26)	24	92.3
Onsite cafeteria <sup>2</sup> (n=24)	24	100
Onsite kitchen <sup>3</sup> (n=24)	23	95.8

Source: pre-implementation Administrator Interviews (all evaluation schools)

1. Two additional schools had access to a community playground for recess.
2. The two pre-K only schools were excluded because pre-K does family-style lunch in the classroom in NYC Public Schools. School kitchens are for food services staff only.
3. The two pre-K only schools were excluded. One school had a partial kitchen onsite.

## D. OTHER NUTRITION SUPPORTS

Programs, policies or practices that expand access or improve appeal for healthy food and beverages help to create a supportive environment for healthy eating behaviors. The New York City Department of Education (NYCDOE) updated its wellness policies in 2010<sup>28</sup> and encourages schools to develop school wellness councils to “monitor school nutrition and physical activity policies and practices.” The NYCDOE also offers grants to schools looking to establish or strengthen school wellness councils.<sup>29</sup> The citywide wellness policy also outlines the minimum nutritional quality of food and beverages served as school meals, available for purchase as snacks and sold at fundraisers. Schools are also encouraged to communicate healthy eating tips and ideas for healthy snacks to parents. Lastly, at the start of the 2017-2018 school year, NYCDOE announced that school lunch and breakfast would be served for free to all students in NYC public schools.<sup>30</sup>

During pre-implementation interviews, administrators were asked specifically about common wellness programs and policies, and the number and percentage of schools with these supports is presented in the sections below. Additionally, all interviewees had the opportunity to mention a variety of other programs and policies during open-ended questioning; in these instances, the number of schools where

<sup>28</sup> NYC Department of Education. (2010). *The New York City Department of Education Wellness Policies on Physical Activity and Nutrition*. Retrieved from: [http://schools.nyc.gov/NR/rdonlyres/097B371B-3E3A-4C22-A6C7-63173A42ACF7/0/FINALNYCDOEWellnessPolicy\\_0713\\_addressupdated04092012.pdf](http://schools.nyc.gov/NR/rdonlyres/097B371B-3E3A-4C22-A6C7-63173A42ACF7/0/FINALNYCDOEWellnessPolicy_0713_addressupdated04092012.pdf)

<sup>29</sup> NYC Department of Education. (2017). *School Wellness Councils*. Retrieved from: <http://schools.nyc.gov/Academics/Wellness/WhatWeOffer/WellnessCouncils/default.htm>

<sup>30</sup> NYC Department of Education. (2017). *Flyer: Lunch is now at no charge for all NYC students!* Retrieved from: [http://www.schoolfoodnyc.org/user\\_view/language\\_view.aspx?key=FreeLunch](http://www.schoolfoodnyc.org/user_view/language_view.aspx?key=FreeLunch)



one or more interviewed staff members mentioned select other programs is presented in the sections below.

## Other Nutrition Programs

Overall, administrators, teachers and Coordinators in 16 of the 26 schools (61.5%) reported that their school has one or more additional programs or initiatives in place that encourage healthy eating. Some of these initiatives focus on a myriad of topics, but incorporate messages or lessons about healthy eating into the program or health education curricula (may be integrated into Physical Education/Gym). Many of these initiatives are led by community based organizations (CBOs) in partnership with NYC’s Department of Education’s Community Schools<sup>31</sup> and United Federation of Teacher’s Community Learning Schools Initiative.<sup>32</sup>

Administrators were asked specifically about several known programs in NYC public schools, as shown in Exhibit IV-4. Of the 26 schools included in the evaluation, thirteen (50%) participated in the NYCDOE-sponsored Breakfast in the Classroom program<sup>33</sup> or allowed students to eat breakfast in the classroom. Eight schools (33.3%) reported that they have an onsite school garden, while three additional schools have received a grant and/or are in the process of building a school garden. Four schools (16.0%) have a food pantry, backpack program or provide food for economically disadvantaged students to bring home to supplement the food they receive outside of school. Seven additional schools expressed interest in bringing a program to their school that provides this support to their students and families. In four of the 26 schools (15.4%), the administrator indicated that school lunches exceed the guidelines set by the NYCDOE. The quote below provides an example of a policy or practice that was changed to improve the healthy eating environment in the school.

*“We looked at the menu [for school meals] and tailored it [...] based [on discussions] from the school leadership team and conversations with parents, we had decided to take chocolate milk off the menu about three years ago [to make school meals healthier].”*

—CookShop School Administrator

### Exhibit IV-4. Nutrition programs present in evaluation schools

Nutrition Programs	Number of schools	% of schools
Nutrition programs other than CookShop (n=26)	16	61.5
Specific nutrition initiatives		
Active school wellness council or group (n=26)	10	38.5

<sup>31</sup> The Community School initiative represents a \$100 million investment that fosters collaboration between schools and community partners for the success of students across 130 New York Public Schools. <http://www.communityschools.nyc/>

<sup>32</sup> The New York City Community Learning Schools initiative facilitates partnerships between schools, nonprofits, businesses and the government to improve student achievement, health, and safety. <http://www.cdfny.org/research-library/publications/2014/the-new-york-city.pdf>

<sup>33</sup> Breakfast in the Classroom is a NYCDOE initiative that provides free, nutritious breakfast for elementary students. <http://www.schoolfoodnyc.org/OurPrograms/bic.htm>



Breakfast in the classroom (n=26)	13	50.0
School garden (n=24)	8	33.3
School food pantry or backpack program (n=25)	4	16.0
School lunch exceeds requirements set by DOE (n=26)	4	15.4
Fruit and vegetable snack program (n=25)	1	4.0

Source: Pre-implementation Administrator interviews (all evaluation schools)

## Nutrition Policies and Practices

School policies and practices for healthy eating, such as rules about foods that can be consumed in classrooms or on school grounds, are another way the school environment can help support improved health behaviors. School policies are written statements often communicated to parents in a student handbook, while practices are not formalized rules but typical behaviors expected by students and staff. Exhibit IV-5 illustrates that 21 of the 26 evaluation schools reported that they have one or more policies or practices related to healthy eating. Specific policies mentioned include healthy snack policies (at least 11 schools) and healthy celebrations<sup>34</sup> (in 4 schools). Schools that implemented healthy snack policies reported that unhealthy foods (e.g., chips, cookies, soda) brought from home are not permitted during school lunch or snack time. If a child brings an unhealthy snack, most schools with this policy indicated that the snack will be confiscated, replaced with a healthy snack, and a note sent home to the parent or caregiver reminding them of the policy. Healthy snack policies may or may not extend to classroom celebrations or school fundraisers.

*We have a criteria for those snacks [sent by parents] and if something comes into the building that are not a part of that, we send it home in writing, it is in the parent handbook and we will confiscate it and will give them a piece of fruit to go in its place.*

—CookShop School Administrator

### Exhibit IV-5. Schools with policies or practices encouraging healthy eating

Policies or practices encouraging healthy eating	Number of schools
Policies or practices supporting healthy eating and nutrition (n=26)	21
Healthy snack policies	11
Healthy celebration policies	4

Source: Pre-implementation administrator interviews, onsite administrator interviews, onsite CookShop Coordinator interviews, onsite teacher interviews (all evaluation schools)

## E. OTHER PHYSICAL ACTIVITY SUPPORTS

<sup>34</sup> Criteria for healthy celebrations have been outlined by a variety of organizations and typically include school policy changes that exclude unhealthy foods from classroom celebrations and require or encourage use of healthy foods and drinks and physical activity. <https://healthymeals.fns.usda.gov/local-wellness-policy-resources/wellness-policy-elements/healthy-celebrations>



The NYCDOE 2010 wellness policy guidelines also outline recommendations for physical education and additional time dedicated to physical activity in schools. According to New York State Education Law 803, elementary students (K-6) must participate in physical education for a minimum of 120 minutes per week, with grades K-3 receiving physical education every day and grades 4-6 participating in physical education at least three times per week,<sup>35</sup> however as of 2016, no physical education teachers' license was offered for elementary teachers<sup>36</sup> and a 2015 report<sup>37</sup> found that 59% of elementary schools in NYC lacked a certified physical education teacher. The NYCDOE also recommends that elementary students receive daily recess for at least 20 minutes per day. Additionally, schools are encouraged to offer extracurricular physical activity programs before and after school, and teachers and other school personnel should not use or withhold physical activity as punishment. Schools are also encouraged to incorporate physical activity breaks into the school day and the NYCDOE recommends that all elementary schools utilize Move-to-Improve,<sup>38</sup> a classroom-based physical activity program, to increase the students' total activity time and decrease sedentary behavior.

To bolster physical education in NYC schools, Mayor Bill de Blasio's 2016 executive budget allocates \$100 million over 4 years to ensure that public schools can meet state requirements. In addition to other initiatives, the funding will be used to expand *PE Works*<sup>39</sup> to all schools city-wide beginning in the 2016-2017 school year. *PE Works* will ensure that NYC schools promote Move-to-Improve and qualified teachers in all grades deliver rigorous physical education curricula, among other efforts. While steps will be taken to establish high-quality physical education for students in all grades, one of *PE Works*' goals is to ensure that all elementary schools meet state physical education requirements by June 2019.

### Other Physical Activity Programs

Interviewees were asked about ongoing programs in their school that help promote physical activity and reduce sedentary behavior. As shown in Exhibit IV-6, the most frequently mentioned physical activity programs were after school programs, including dance, basketball or other after school curricula with a significant physical activity component, such as Mighty Milers/Road Runners,<sup>40</sup> Move-to-Improve, and

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<sup>35</sup> New York City Department of Education. Elementary School Physical Education Requirements.

[Http://Schools.Nyc.Gov/Nr/Rdonlyres/C7d11638-1215-4d03-9e81-57a74c26fef9/0/Wqrgpees20160907.Pdf](http://Schools.Nyc.Gov/Nr/Rdonlyres/C7d11638-1215-4d03-9e81-57a74c26fef9/0/Wqrgpees20160907.Pdf)

<sup>36</sup> School Book. (2016). *Mayor's Budget Adds \$100 Million for Physical Education in Schools*. Retrieved from:

<https://www.wnyc.org/story/mayors-budget-adds-100-million-physical-education-schools/>

<sup>37</sup> New York City Comptroller Scott M. Stringer. (2015). *Dropping the Ball: Disparities in Physical Education in New York City*. Retrieved from: [https://comptroller.nyc.gov/wp-content/uploads/documents/Phys\\_Ed.pdf](https://comptroller.nyc.gov/wp-content/uploads/documents/Phys_Ed.pdf)

<sup>38</sup> Move-to-Improve was designed by the NYCDOE and the New York City Department of Health and Mental Hygiene. Teachers are trained to lead physical movement breaks in the classroom. This study took place in the first year of an announced expansion of the program (<http://www.wnyc.org/story/mayors-budget-adds-100-million-physical-education->).

<sup>39</sup> NYC Department of Education Office of School Wellness Programs. (2016). *Revitalizing Physical Education in New York City Schools: Year one report on the PE Works initiative, 2016*. Retrieved from:

[http://schools.nyc.gov/NR/rdonlyres/5BD34CD6-D413-47A2-8742-9FB42602EFBE/0/DOEPEWorksReportforYear1201516\\_APPROVED.pdf](http://schools.nyc.gov/NR/rdonlyres/5BD34CD6-D413-47A2-8742-9FB42602EFBE/0/DOEPEWorksReportforYear1201516_APPROVED.pdf)

<sup>40</sup> Rising New York Road Runners (Formerly Mighty Milers) Is A Free Physical Activity Curriculum That Aims To Develop Physical Literacy And Long-Term Athlete Development. [Http://Www.Nyrr.Org/Rising-New-York-Road-](http://Www.Nyrr.Org/Rising-New-York-Road-)



Go Noodle.<sup>41</sup> In total, almost all of the evaluation schools (88.5%) indicated that they have at least one physical activity program, aside from CookShop.

*It is an after-school program, it is a CBO, they come in and do homework help, enrichment activities, and then I think they have at least an hour of physical activity where they do gym, or whatever, they do organized sport, dance and movement, you know things like that.*

—CookShop School Administrator

#### Exhibit IV-6. Physical Activity Programs in Evaluation Schools

Nutrition and Physical Activity Programs	Number of schools
Other physical activity programs besides CookShop (n=26)	23
Afterschool program	15
Mighty Milers/Road Runners	11
Move-to-Improve	10
Go Noodle	7

Source: Pre-implementation administrator interviews, onsite administrator interviews, onsite CookShop Coordinator interviews, onsite teacher interviews (all evaluation schools)

#### Physical Activity Policies and Practices

Policies or practices that encourage physical activity were less common than those related to nutrition; 14 of the 26 schools participating in this evaluation had policies or practices that encourage physical activity. Examples include having recess before lunch, leaving school facilities open on weekends for families to engage in physical activity or recommending that teachers include a minimum amount of physical activity in their classroom each day (e.g., through Move-to-Improve, Go Noodle or a similar program).

*When our kids cannot go outside to play, they go in the auditorium, we put on Go Noodle!, and they dance in the auditorium. They're still getting exercise. It used to be, they'd sit and they'd watch a movie in the auditorium. They're not getting any exercise; they're just sitting still, watching a movie. Now, they're in the auditorium dancing and exercise. At least they get some exercise when it rains or it's below zero, and they can't go out.*

—CookShop Coordinator

In all schools except for one, administrators reported that students receive recess five days per week for between 15 and 30 minutes each day (20 to 25 minutes in the majority of schools). One school reported that students have recess four days per week and another indicated that, while other grades have recess

Runners#Programs

<sup>41</sup> Go Noodle Is A Free Web-Based Activity That Aims To Make Movement And Mindfulness An Integral Part Of The Day And Includes Short Videos, Or “Brain Breaks,” That Include Physical Activity. <https://App.Gonoodle.Com/>



every day, kindergarteners do not receive recess at this time. Many administrators specified that children in pre-K receive between 45 and 60 minutes of recess each day. As shown in Exhibit IV-7, students at 7 (29.2%) of the 24 elementary schools (pre-K schools excluded) receive 100 minutes or fewer for recess each week, while students at the majority of schools receive more than 100 minutes of recess each week—between 101 and 125 minutes at 11 (45.8%) of the schools and 126 minutes or more at 6 (25.0%) of the schools. Recess is usually held after students eat lunch, with lunch and recess amounting to a 50-minute period. Students are encouraged to play outside unless there is rain, snow or freezing temperatures, in which case many schools open the gym to students for play.

Administrators at all evaluation schools were also asked about the length of time and frequency students received physical education. As discussed above, the NYCDOE recommends a minimum of 120 minutes of physical education each week for elementary school students; however, 15 (62.5%) of the 24 schools surveyed do not meet this requirement. Administrators expressed difficulty with scheduling and the limited number of physical education teachers and/or gym space to allot for more time in physical education. The majority of administrators reported that students receive physical education one to three times per week for periods lasting between 30 and 50 minutes, while administrators from two schools reported that all or some of the lower grades received physical education five times per week, which aligns with the NYCDOE’s requirements. The number of times students received physical education each week varied based on scheduling and/or grade level, according to most administrators.

**Exhibit IV-7. Schools with policies or practices encouraging physical**

Policies or practices encouraging physical activity	Number of schools	% of schools
Policies or practices encouraging physical activity (n=26)	14	53.8
Approximate Time Allocated for Recess <sup>1</sup> (n=24)		
75 – 100 minutes per week	7	29.2
101 – 125 minutes per week	11	45.8
≥ 126 minutes per week	6	25.0
Approximate Time Allocated for Physical Education <sup>2</sup> (n=24)		
< 120 minutes per week	15	62.5
≥ 120 minutes per week	9	37.5

Source: Pre-implementation administrator interviews (all schools)

1. The two pre-K only schools were excluded because Pre-K students typically receive between 225 – 300 minutes of outdoor play per week
2. Time allotted for physical education frequently varied by grade-level and was dependent on scheduling.

**F. CHAMPIONS**

All interviewees were asked if they could think of one or more individuals in their school who act as a “Champion for Change,” someone who provides sustained and often charismatic leadership that successfully advocates for, creates appeal for or improves access to nutrition and physical activity in their school environment. While many key informants suggested individuals who may be considered Champions for Change, only those who had taken action above their regular role and responsibilities in the school were considered Champions for Change in this analysis (e.g., a gym teacher who talks to students about the importance of physical activity would not be considered a Champion for Change). Examples of Champions for Change include teachers, administrators, staff members, and/or parents who advocate for and/or run a program for healthy eating or physical activity or a group that spearheads a wellness council within the school. Of all 26 schools included in this evaluation,



interviewees from 16 schools indicated that one or more individuals in their school acts as a Champion for Change. Interviewees most consistently identified their gym teacher as a champion (10 schools), while interviewees from 10 schools identified adults in other roles as champions for healthy eating and physical activity.

*[The PE teacher], he kind of fell into it when he started as the PE teacher, but he has taken it to another level...he also provides professional development for parents on nutrition. I actually purchased some books on nutrition for families and it kind of goes through breaking it down the fruits, the vegetables, protein, and then provides different snack ideas. And then the two teachers that came forward about [forming] the nutrition committee that came from them - that was something they were really interested in.*

—CookShop Administrator

#### **Exhibit IV-8. Champions for Change in evaluation schools**

<b>Champion</b>	<b>Number of schools</b>
Schools with a Champion for Change (n=26)	16
PE teacher	10
Other	10

*Source: Pre-implementation administrator interviews (all schools), onsite administrator interviews, onsite Coordinator interviews, onsite teacher interviews.*



# VI. School and Community Support for CookShop

## A. SCHOOL SUPPORT FOR COOKSHOP

Support for CookShop within schools and communities is essential to maximizing the program’s effectiveness, sustainability and integration into other curricula and student lifestyles. In addition, the program should be supported and backed by school administration, teachers who implement the program and Coordinators. Their support of the program is described below.

Food Bank reports that an average of 87.3% of schools return to implement CookShop year after year. Initial support for CookShop implementation was generated by an administrator (i.e., principal, assistant principal or dean) in half of the evaluation schools (13 of 26), while a group of teachers, administrators and staff members generated initial support in 10 schools and an individual other than an administrator or external group (e.g., CBO) initiated support in three schools. Whether or not they initiated support for CookShop, administrators from all schools included in the evaluation demonstrated their support for CookShop by applying for CookShop on behalf of their school and attending the informational summer session held by Food Bank. Even though the comparison schools did not implement CookShop during the 2016-2017 school year, they applied for the program and were placed on a waitlist for an upcoming school year.

Various school staff members are involved in the day-to-day operations of CookShop; however, one individual must serve as the Coordinator, a role recognized by Food Bank as the most important for ensuring the program’s success. The Coordinator may volunteer or be selected in some other manner for serving in this capacity. Coordinator duties include ordering supplies for classroom lessons, ensuring that CookShop teachers complete verification activities,<sup>42</sup> and serving as a liaison between other school staff and Food Bank. Exhibit 35 illustrates that 4 of the 12 interviewed Coordinators held an administrative role, such as dean or assistant principal.

### Exhibit V-1. Role of CookShop Coordinator in schools where a site visit was conducted (N=12)

Job Category of CookShop Coordinator	Number of schools (n=12)
Dean	2
Assistant Principal	2
Teacher	6
Other	2

Source: Onsite Coordinator interviews

Administrators, Coordinators and teachers implementing CookShop described working together in CookShop schools to make the program a success. On a scale of 1 to 10, teachers and Coordinators

<sup>42</sup> Verification activities are forms that must be completed by all teachers implementing CookShop and submitted to Food Bank via an online portal. These forms are used by Food Bank to track reach and allow teachers to provide lesson feedback.



interviewed during onsite visits (n=31) rated their school's overall support for CookShop as 9.4 on average (range: 7 to 10). Administrators interviewed during site visits universally agreed that their school demonstrated a high level of support for CookShop. A few administrators also reported that their school had already established a commitment to healthy eating and physical activity, so CookShop was a natural fit. Other administrators were more attracted to the academic benefits of CookShop, such as its potential to be integrated into literacy, math and other subjects.

*Our school has a healthy eating initiative, it is part of our school's culture, this is a natural fit as far as I am concerned for our school and my school population.*

—CookShop Administrator

### Support provided by Administrators

Interviewed Food Bank staff members described administrators as the gatekeepers to a school's support for CookShop, whose enthusiasm for the program trickles down to the teachers and staff. In addition to providing their initial support and precipitating their school's enrollment in CookShop, administrators also supported the program by selecting the teachers or grades that implement CookShop and/or inviting teachers to participate in the program. Once enrolled, administrators supported teachers in attending the training held by Food Bank by providing time (e.g., ability to leave a period early) or, in a few cases, another incentive to attend the training. Prior to implementation, administrators also guided the scheduling of CookShop to balance the time needed for the program with other curricula by selecting a day and time for teachers to dedicate to the program each week. When asked how much they agreed with the statement, "My principal is very supportive of CookShop Classroom," before implementation, teacher respondents to the online teacher survey (n=88) rated principal support an average of 9.3 on a scale of 1 to 10 where 10 is strongly agree, further demonstrating the strong support by administrative staff for CookShop.

*Just initially signing up for the program as a school leader, I didn't want to see any one class not being involved within the grade. So I talked to them extensively about it, and we actually paid per session for teachers to attend the initial training for us to get into the program.*

*First we have to make sure how it works with the schedule, because we don't really want to cause any inconvenience as far as ... the other [curricula] ... And we'll also go in and watch the lessons and give feedback to them ... as best as we can.... We'll support them curriculum-wise, or as far as the schedule is concerned and setting up.*

Once implementation of CookShop began in schools, administrators were less involved with the



CookShop's day-to-day activities unless they were also serving as the Coordinator. Still, most continued to provide a high level of support to the Coordinators and teachers implementing the program. In fact, teacher rating of principal support remained high in the second online teacher survey after completion of CookShop in the classroom, with an average of 9.0 on a scale of 1 to 10, where 10 is the highest level of support (n=34). Several Coordinators and teachers indicated that lack of time was the biggest barrier to successfully carrying out their roles and that their administrators helped to alleviate this challenge by allotting an extra period during the week or extra support staff for CookShop lesson preparation and allowing schedule flexibility to help accommodate the extra work required to implement CookShop. Additionally, many Coordinators and teachers reported that they discussed program progress with their administrator, perceived successes and challenges, and future expansion of CookShop to additional grades/classes. Overall, most Coordinators and teachers felt well-supported by administrators and were comfortable asking for additional support when needed, and in a few schools, welcomed administrator observation of CookShop lessons. However, during the site visits which occurred between the mid-point and end of the implementation period, some teachers mentioned that they had not interacted much with their administrator(s) about CookShop since the program was launched.

*[Assistant Principal] has been great. She's been great. Any time if I need help, or they'll call up, they're like, "We have an extra prep today. Do you need it for CookShop?" So, they've been very helpful.*

*Our principal, she was a proponent of this from the beginning and I think little by little seeing the benefit and the enjoyment of it, I think she's more willing to have more classrooms get involved in it.*

—CookShop Teachers

### Support provided by CookShop Coordinators

Coordinators provided support to teachers by assisting with the day-to-day operations of the program. Several Coordinators mentioned that they met with teachers prior to and early in the implementation period to provide professional development for CookShop, including reviewing lessons, unpacking the materials provided by Food Bank and answering questions. During implementation, Coordinators ordered groceries for CookShop activities for all classes, helped with troubleshooting and assisted with verification activities. Most Coordinators regularly reminded teachers to complete verification activities after each lesson, helped troubleshoot issues with the website and, in some cases, completed the verification activities for the teacher. Additionally, some Coordinators prepared and/or delivered groceries to teachers prior to CookShop lessons, while others communicated when groceries would be available for pick-up in a common area.

*I was actually distributing the supplies on Wednesdays after my third period class that I have a prep and now they already know it's in the teacher's lounge. Most of them go and get them like I don't even have to do that anymore.*



—CookShop Coordinator

On a scale of 1 to 10, Coordinators that participated in site visit interviews (n=12) rated their communication with teachers as 8.9, on average; however, scores ranged from 5 to 10. Most of the Coordinators indicated that they communicated daily with teachers about CookShop through informal conversations, while a few reported holding weekly meetings or sending a weekly email to CookShop teachers. When teacher communication was an issue, Coordinators identified lack of time as the greatest barrier. Interviewed teachers in all schools reported feeling highly supported by their Coordinator; food always arrived on time and if there was an issue, the Coordinator made every effort to address it so the teacher could deliver the lesson as planned.

*Professional development, food distribution, troubleshooting with the website and so forth. So it's very much an intimate relationship with the teachers. So they can come in at any time and say whatever difficulties they're having or challenges they're having.*

—CookShop Coordinator

*Oh, very supportive. I mean, [the Coordinator] picked the [grocery ingredients] up and she already had them separated. Okay, this is for your class and this is for your class [...] I think there was one lesson where [...] I was out [that day] and she just said okay, I have your name on a bag in the refrigerator. I did [the lesson] the next day, and she's very supportive in making sure the materials, we got everything.*

—CookShop Teacher

## B. ADOPTION OF COOKSHOP THEMES INTO OTHER CURRICULA

Administrators of four schools interviewed prior to implementation expressed that it was desirable to implement CookShop because the program supports other curricula, particularly math, science and literacy. Some administrators also noted that scheduling CookShop lessons immediately before or after these subjects enhanced the connection between concepts. Teachers in 6 of the 12 schools selected for an onsite visit provided examples of how they integrated CookShop topics into other curricula. For example, teachers connected CookShop with science when discussing health and the body and with literature by choosing writing prompts, such as “Is chocolate milk healthy?” The topics were incorporated into math lessons by using recipes when teaching students about fractions and multiplication. Furthermore, several teachers that work with English Language Learners (ELL) indicated that CookShop helps expand their students’ descriptive vocabulary. A few teachers indicated that they mention CookShop at other points during the day but had not made a concerted effort to integrate the topics into other curricula.



*I've tried every now and then to make connections to my math. So last week we were working on the grains food group. And we had bread [...] and we just made a connection with fractions, which is the unit that we're working on in math. So this is one half of the slice and then we cut it into fourths.*

*—CookShop Teacher*

## C. MARKETING SUPPORT FOR COOKSHOP

Marketing support is an important element of multi-level nutrition interventions and increases the level of exposure to an intervention's key messages. Examples include promotional materials for healthy eating or physical activity that are posted in common areas. During onsite visits, evaluators observed CookShop promotional materials in 11 of the 12 schools visited. Most of these schools had one or more CookShop bulletin board displays in the hallways used to share student work, photos of CookShop activities, announcements for CF, and/or posters promoting healthy eating and physical activity. MyPlate posters, which help to reinforce the main concepts of CookShop, were observed hanging in classrooms, hallways and/or cafeterias of multiple schools. A few schools created a CF display where it would be most visible to parents, in the student drop-off area, to advertise the family component of CookShop.

During onsite interviews, teachers, Coordinators, and administrators remarked on efforts made by CookShop teachers to take pictures of students engaging in CookShop lessons and create promotional CookShop bulletin board displays. Several interviewees also mentioned that they frequently change the display content to ensure a focus on current messages or the food group about which they are learning. Moreover, a couple of interviewed Coordinators mentioned creating their own marketing materials to disseminate to parents.

*We've displayed a lot of the bulletin boards throughout the building promoting CookShop with a lot of student work that they have done. We've placed it in our monthly calendar to let families know what CookShop [is]— where we are in CookShop, what we're focusing on, which food group.*

*—CookShop Coordinator*

## D. DISSEMINATION OF MATERIALS TO PARENTS

The CookShop curricula contain take-home worksheets with recipes and activities in both English and Spanish for children to complete at home with their parents or guardians. Overall, most teachers expressed that they like the idea of take-home worksheets and students occasionally mentioned using the worksheets at home. In addition to the take-home worksheets, interviewees from 7 of the 12 site visit schools explained that their school notifies parents about CookShop activities, including CF, through a take-home newsletter, calendar, or flyer. Despite the ongoing dissemination of materials related to



CookShop, teachers expressed uncertainty about whether parents actually receive them because materials generally do not need to be turned in and teachers have minimal regular contact with most parents. However, many teachers expressed that reaching and engaging parents is a pervasive challenge in their school community and not unique to CookShop.

*I don't know if the kids are giving their parents the information, I don't have parents asking about it. It's not just CookShop, it's everything in our school. There's a breakdown in parent communication.*

—CookShop Teacher

## E. COMMUNITY SUPPORT

### CookShop for Families

All schools implementing CookShop also deliver CF, a series of six workshops that are offered to parents and guardians and complement the lessons delivered in CookShop Classroom. The goal of CF is to engage the entire family in making healthy choices.<sup>43</sup> By targeting the adult members of the student's household and community, this component of CookShop expands the intervention beyond the individual-level of the SEM.

Interviewed schools reported that CF is typically offered monthly and can accommodate approximately 20-25 participants. Schools are encouraged by Food Bank to recruit parents for workshops through multiple channels; schools reported notifying parents and guardians through announcements on the school calendar, parent-teacher organization and/or association meetings, newsletters and/or flyers. CookShop for Families is typically run by the school's Parent Coordinator, a staff member at some schools with the designated role of increasing parent engagement, and/or the CookShop Coordinator. Schools reported weekly attendance that varied from as few as 5 parents to full capacity which varies by school but is approximately 25 parents, and indicated that the same group typically returned each week. At least one school indicated that CF is their highest attended workshop and some second-year CookShop schools reported that attendance has increased from last year. Nonetheless, other schools reported low attendance and were looking for ways to recruit more parents.

The time of day CF was delivered varied by school. Some schools held sessions in the morning when parents drop-off students or before/after other meetings attended by parents, while others scheduled the program during the day or evenings. The time of day during which parent classes are held can impact participation. There was not enough consistency in reporting during this evaluation to identify the best attended CF sessions/times of day.

*So we try to encourage [parents and guardians] to come in. Like I said, there hasn't been as much participation [in CookShop for Families] as we would like,*

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<sup>43</sup> Food Bank for New York City. <https://www.foodbanknyc.org/cookshop-in-schools/>



*but given the fact of our track record I think 10 parents is pretty good. I'm hoping to double that next year.*

—CookShop Coordinator

Interviewees reported that they receive overwhelmingly positive feedback from parents and guardians who attend CF. Schools reporting the most success with CF stated that parents were enthusiastic about the program, tried the recipes at home with their families, and in some cases, schools made adjustments to expand the scope of the program to reach more families. To extend the reach of the program to more families, at least two schools delivered CF in multiple languages simultaneously; staff leading the lesson provided both English and Spanish translations at both of these schools, and one school also translated the class in Urdu. These schools expressed interest in having CF materials translated into additional languages. Additionally, many parents at several second-year CookShop schools participated in the CF series a second time and noted that they would like new recipes to be incorporated into the curricula.

*Just having that participation from the parents showed that the kids are talking about it and that it is going home, which is the main goal that we want. We want it to not only change their behaviors here, we want them to do it at home, where we can't control it. But if they're taking ownership of it, that's a plus.*

—CookShop Coordinator

*[I]t is so powerful because it is our parent community that said, "Hey, we want family CookShop back. We will lead it and we want to expand it to another population." So last year it was conducted primarily in English and this year it will be in Spanish and English and we have an Urdu family who is also trying to come on board trying to bring in that population as well.*

—CookShop Administrator

Despite positive feedback about CF, interviewees from several schools expressed concern that they are failing to reach the parents that may need the program most. As discussed previously, parent outreach was a common challenge across CookShop schools. Some administrators and Coordinators indicated that they considered a turnout of 10 parents to the classes as high compared to the numbers that participate in other school activities. Many teachers, administrators, and Coordinators reported that families are not as engaged in school activities as they would like, often due to work schedules. Some indicated that parents who attend CF are more likely to be engaged in school in general, and that they may be missing parents of the most vulnerable students.

*I would say the challenges would be I guess with any parent activity at the school is just to have more parental involvement, but that's a school-wide issue that we grapple with just for any types of workshops or ideas.*



—CookShop Administrator

*The families that need it the most are not the ones that are coming in to the families CookShop.*

—CookShop Coordinator

## Parent response to CookShop Classroom

As previously noted, a recurring theme among CookShop schools is the lack of parent engagement in classroom activities, and as such, CookShop teachers reported that they did not receive much, if any, feedback from parents about the classroom series. Overall, interviewed teachers rated the success of CookShop in reaching parents as a 5.2 (n=13), by far the lowest rating of any other component of the program. From the online surveys, teachers rated their certainty to engage parents and caregivers in take home materials from CookShop as 7.1 before implementation and 5.9 after implementation on a scale of 1 to 10, where 10 is the highest level of certainty (n=34). As with CF, this score is mostly reflective of schools' recurring difficulty engaging parents in their school community. Generally, teachers expressed that it is difficult to get homework and permission slips turned in. Because students were not required to return CookShop take-home activities, teachers were unable to gauge whether the worksheets had been completed at home. Teachers hoped, but were unsure, whether students and parents spent time reviewing CookShop materials, discussing healthy foods or preparing the recipes. Although teachers did not receive much feedback from parents about CookShop and the supportive take-home materials, several observed their students bringing in healthier snacks from home.

*I haven't got much feedback other than what we've given to them so I don't really know that. I don't know how much of the parents have really spoken to the children about things like that. I would hope some, but I really don't know.*

—CookShop Teacher



## VII. Operationalizing CookShop: Successes and Challenges

In order to successfully implement CookShop, Coordinators and teachers must work together and with Food Bank staff to order groceries, distribute materials and complete verification forms. As mentioned previously, Coordinators serve as the main liaison between Food Bank and the school and are responsible for distributing materials, ordering groceries and providing assistance to teachers. Teachers have less one-on-one contact with Food Bank after their initial hands-on training (detailed in section VI.A); they receive Food Bank’s weekly reminders regarding submission of lesson verification forms and direct technical assistance only upon request. In addition to delivering CookShop curricula, teachers must prepare recipe ingredients and review curricula and associated materials prior to class and complete verification forms after each class.

Additionally, Coordinators and teachers must coordinate activities to ensure successful implementation of CookShop. Overall, interviewees experienced a learning curve related to operationalizing CookShop, including the timely ordering and distribution of groceries and materials and preparing to deliver planned activities. However, interviewees stated that the ongoing support received from Food Bank and their grocery store partner allowed them to overcome these initial challenges. Exhibit VI-1 below shows the average scores provided by Coordinators related to the successful operation of CookShop.

### Exhibit VI-1. Success operationalizing CookShop

	N <sup>a</sup>	Average score (range)
Success ordering and receiving groceries and materials	10	8.6 (5, 10)
Success distributing groceries and supplies	8	9.4 (8, 10)
Technical assistance received from Food Bank	12	9.4 (8, 10)

<sup>a</sup>N indicates the number of Coordinators who provided a numeric score for the respective topics.

Source: Onsite Coordinator interviews

### A. TRAINING PROVIDED BY FOOD BANK

Prior to implementation during the 2016-2017 school year, all Coordinators and teachers new to the program were required to attend one of two 4-hour training seminars led by Food Bank at the United Federation of Teachers training center, located in Manhattan. The training began with an opening message outlining CookShop goals, the program’s impact to-date, and program partners before Coordinators and teachers were separated into different, role-specific sessions. All teachers participated in a session to review the curriculum goal, design, program materials and calendar and associated operations (e.g., submitting verification forms) related to the successful implementation of CookShop. Coordinators learned about placing and receiving the grocery orders for the lessons, as well as tracking the teachers’ verification forms in the system. All training participants, teachers and coordinators, completed a classroom “Chef” lesson as well, walking through the steps that would take place in the classroom including reviewing the talking points and preparing and tasting the recipe, Peachy Orange Salsa. Food Bank included experienced CookShop teachers and Coordinators in the sessions to offer suggestions for successful implementation, as well as to answer questions for those just starting out.

Teachers and Coordinators had mixed opinions about the training seminars, with a total of 31 positive



and 30 negative references noted during interviews. Aspects of the training that teachers and Coordinators liked most were that it was straight-forward, adequately prepared them to implement CookShop and included hands-on activity which allowed for a deeper understanding of the program. The most frequent critique of the training was that it was difficult to travel to the location in Manhattan. Some teachers had to leave before the end of the school day and make arrangements for their students, or had to attend training on a Saturday. Administrators from a few schools provided a monetary or other incentive for staff to attend the training but most attended on their own time. Several schools reported that they would have enrolled more classrooms if the training had been more convenient. While the in-person training is a one-time requirement (webinars are provided for subsequent years), Food Bank could consider exploring other options to make the initial training more convenient for teachers and Coordinators new to the program by holding it as a webinar or providing onsite training at new schools.

*I think the training provided really great preparation just for the ideas or the needs of what might be in the classroom and how to teach the kids about cutting and preparing and washing hands, it was enough.*

—CookShop Teacher

## B. ORDERING AND DISTRIBUTING GROCERIES AND MATERIALS

Coordinators are responsible for ordering, receiving and distributing groceries and other materials. Based on the implementation schedule, groceries should be ordered for and distributed to grades 3 through 5 weekly and to the lower grades every three weeks. Groceries are ordered online through a grocery distributor organized by Food Bank (e.g., Fresh Market) and are delivered during a time window selected by Coordinators. Other materials include the Chef's Bin, which contains reusable materials for cooking activities, and other teaching aids that are distributed to teachers on a one-time basis prior to the start of implementation.

When asked to score their success ordering and receiving grocery supplies on a scale of 1 to 10, interviewed Coordinators (n=10) provided an average score of 8.6, with scores ranging from 5 to 10. Four Coordinators reported one or more issues with delivery, such as receipt of the wrong ingredients or a supplier with insufficient stock of a required ingredient. Refrigerator space, which was available to only four Coordinators, was an important facilitator for successful handling of grocery supplies. Coordinators who were also school administrators tended to have an easier time receiving groceries because their schedules were more flexible, allowing them to be available during delivery times, unlike teachers who are required to be in their classroom for most of the day.

*Yeah, it is time consuming for me 'cause I'm doing it [...] the food comes during my lunch and I have to go get the kids, and the food comes, and I don't have time to distribute, and the kids are coming in the room, and I have all this food.*

—CookShop Coordinator



In terms of distributing groceries to classrooms, interviewed Coordinators (n=8) rated their success as 9.4 on average (range: 8 to 10) on a scale of 1 to 10. Several Coordinators said that their distribution duties were initially challenging but become easier over time. According to most Coordinators, the key to successfully handling groceries is to develop a distribution system and to engage and leverage other staff members or students in the process. At least one Coordinator admitted that her duties were difficult to maintain alongside other responsibilities.

*We have a plan that the shipment comes in on Tuesdays, our CookShop is on Wednesdays [...]. The shipment comes in by 1:00. I have the parent coordinator and one of the office ladies, they help me sort the food right here. We put them in bags and then we take them up to the room where all the teachers meet on Tuesdays from 3:00 to 3:30 to prep the food for the next day. So, we have a system.*

—CookShop Coordinator

## C. PLANNING AND VERIFICATION ACTIVITIES

Within one week of completing each CookShop Classroom lesson, teachers are required to submit a verification form to Food Bank through an online portal. In the verification form, teachers must report the date of the lesson and the number of students present. There is an open field for any comments about the lesson teachers want to leave. Though simple to complete, Coordinators and teachers reported that they struggled with remembering to submit verification activities and experienced several technical difficulties when submitting the forms. For example, the online portal was inaccessible on some school computers due to a firewall and submitted forms were occasionally not received by the system or the form was unavailable upon completion of a lesson. Coordinators frequently had to remind teachers to complete their verification forms and in several instances they took it upon themselves to submit the forms. Based on responses from the online surveys, teachers' self-efficacy about completing the verification forms decreased significantly from an average of 8.4 pre-implementation to 7.4 after implementation ( $p=0.03$ ) on a scale of 1 to 10, where 10 is absolute certainty they can complete the task. This decrease may be related to the technical difficulties described above.

## D. TECHNICAL ASSISTANCE PROVIDED TO SCHOOLS FROM FOOD BANK

Food Bank provides technical assistance and ongoing support to CookShop schools. Specifically, prior to the first lesson Food Bank provides classroom teachers with printed lesson plans, materials and a Chef's Bin. Once the lessons begin, Food Bank's Nutrition Health Services Coordinators primarily communicate with each school's designated Coordinator.

Interviewed school staff were very satisfied with the support they received from Food Bank as were teacher respondents to the online surveys. Overall, interviewees made 37 positive comments about the support they received and only 6 challenge-related comments. The challenges that were noted, albeit by



only a small number of interviewees, related to receiving too many emails from Food Bank, technical difficulties ordering groceries and completing verification forms, and some initial challenges associated with implementing a program for the first time, as previously described.

Findings from the teacher survey are consistent with the overall high level of support reported by interviewees. In response to the following statement: “I have all the tools and resources I need to successfully implement CookShop,” teacher survey respondents rated their agreement as 8.7 prior to implementation and 9.2 after implementation, on a scale of 1-10, where 10 is strongly agree. Interviewed Coordinators (n=12), who had the closest working relationship with Food Bank, rated the overall support they received from Food Bank as 9.4 on average (range: 8 to 10) on a scale of 1 to 10. In particular, Coordinators described the support they received from Food Bank as helpful, timely and consistent.

*In terms of if I have a question and I need to reach out, I am thrilled with the speed of their response. They are really accommodating; they're helpful; my questions are always answered... In terms of supporting us with specific issues, troubleshooting issues, they're fantastic. I have absolutely no complaints.*

—CookShop Coordinator

## VIII. Implementing CookShop Classroom: Successes and Challenges

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Food Bank provides all teachers with a grade-specific lesson plan to guide delivery of CookShop Classroom. The curriculum for pre-K to grade 2 spans 18 weeks and includes three lessons for each of six CookShop themes, while grades 3-5 receive 6 weekly lessons, or one lesson per theme. Each theme includes three components: an educational overview (the “Explorer” lesson for K-2), a cooking activity (the “Chef” lesson), and a wrap-up segment that integrates a brief physical activity (“Discovery” lesson).

Interviewed teachers (n=25) were asked to describe and rate on a scale of 1 to 10 their success implementing each lesson component as well as their success engaging students and expanding student knowledge of healthy eating and physical activity (Exhibit VII-1). Some teachers did not provide a score when prompted and instead described their successes and challenges; this feedback was considered and has been incorporated into subsequent sections. The online surveys asked teachers about their self-efficacy for implementation of CookShop in the classroom prior to implementation and after implementation. The teachers had high certainty that they could implement CookShop into their classroom and carry out the lesson plans both before and after implementation. The areas where self-efficacy declined slightly were preparing the materials for the lessons and integrating the lessons into the school day, as shown in Exhibit VII-2.



**Exhibit VII-1. Interviewed teachers' perceived success for a variety of CookShop components, scored on a scale of 1 to 10, where 10 is very successful**

CookShop Component	N <sup>a</sup>	Average score (range)
Engaging students	22	9.2 (2, 10)
Implementing lesson plans	21	7.9 (5,10)
Cooking activities	18	8.5 (2, 10)
Physical activity component	15	5.9 (1, 10)
Expanding student knowledge of healthy eating and physical activity	25	8.6 (4,10)

<sup>a</sup>N indicates the number of teachers who provided a numeric score for the respective components.

Source: Onsite teacher interviews

**Exhibit VII-2. Surveyed teachers' perceived self-efficacy for a variety of CookShop components, scored on a scale of 1 to 10, where 10 is absolutely certain they can complete the task**

CookShop Component	Pre-implementation N=88	Post-implementation N=34
	Average score (range)	Average score (range)
Preparing teaching materials	8.4 (5,10)	7.5 (0, 10)
Integrating CookShop into school day	8.0 (2,10)	7.4 (0, 10)
Following the CookShop calendar	8.1 (2,10)	8.4 (3, 10)
Engaging students	9.2 (3, 10)	9.4 (6, 10)
Implementing lesson plans	8.6 (4,10)	8.5 (3,10)
Cooking activities	9.2 (5, 10)	9.0 (5, 10)

Source: Online teacher surveys



## A. ENGAGING STUDENTS

Interviewed teachers (n=22) reported a high level of success engaging students in CookShop, scoring student engagement an average of 9.2 on a scale of one to ten (Exhibit VII-1). Most scores fell between 8 and 10, although one teacher scored student engagement as a 2. Teachers said that they provided high scores for student engagement during CookShop lessons because their students were excited about CookShop all week, focused on the lessons and activities, and continued discussions about healthy eating outside of the CookShop lesson. Findings from the post-intervention teacher survey supported these findings, online survey respondents rated their success engaging students 9.4 on average (Exhibit VII-2).

*All the students are engaged regardless. Just when it comes to the trying of the foods, maybe some – one or two kids are going to be reluctant to try it. But overall, they're all participating. And they're very interested about where food comes from [...] I even hear them talk about it during snack [...] they'll wonder about what kind of food it is. Is it go, slow or whoa?*

—CookShop Teacher

## B. IMPLEMENTING THE LESSON PLANS

As shown in Exhibit VII-1, interviewed teachers (n=21) generally described the lesson plans as easy to follow and rated their success implementing the educational component of CookShop an average of 7.9 (range: 5 to 10). Respondents to the post-intervention teacher survey provided a slightly higher average score of 8.5 on the same scale (Exhibit VII-2). Among those who provided lower scores, several teachers indicated that they had to read through the lesson prior to class time and some wished that they had given themselves more time to internalize the material. Critiques of the lesson plans included that the material was too complex for some students, especially younger students and those with learning disabilities. In these instances, teachers tried to cover the key points, but allowed for more flexibility and tailored the information to their students. At least one teacher, who regularly leads class in both English and Spanish (via their school's dual-language program), wished that the lesson plan materials were translated in both languages so she didn't have to think through the translation on the spot.

*I think that the lesson plans are very thorough and they're [...] concise. It's very well organized. And I like how I can just look at the lesson and just [...] know what to do. It's very explicit and there's no ambiguity. So I can really follow the day's lesson without a problem.*

—CookShop Teacher

*[The lesson plans are] easy enough to read [...] [My co-teacher and I] just read it and do [...] our own little spin on it and what works for our class [...] especially the students in special-ed ICT class, so we need to make sure that they already*



*understand everything.*

—CookShop Teacher

## Student responses to lessons

Teachers reported that students look forward to CookShop and that, while their favorite component of the program was the cooking activities, students also enjoyed other hands-on activities and the discussions stimulated by the lessons. Consistent with the findings from the onsite observations (discussed in the CookShop Classroom Observation Findings chapter), interviewees reported that students are very engaged in CookShop lessons, more so than other curricula. Teachers and other interviewed school staff members believe that students are absorbing the key concepts presented in CookShop as demonstrated by the conversations between students about healthy foods they overhear. A couple of the grade 3-5 teachers expressed an interest in having more CookShop lessons available for their students, but recognized that it would be challenging to incorporate these lessons into their schedule, which is already condensed due to testing.

*[My students] are always eager for the next lesson and it's been a very positive experience so they are very positive. I have some students that have some disciplinary concerns and with Cook Shop, they are engaged and they're ready to learn.*

—CookShop Teacher

## C. COOKING ACTIVITIES

As previously mentioned, teachers universally agreed that the cooking activities were students' favorite component of CookShop and were the most successful. Nonetheless, many found it challenging to fit ingredient preparation into their day. On a scale of 1 to 10, interviewed teachers (n=18) rated their success implementing cooking activities as an 8.5, although scores ranged from 2 to 10 (Exhibit VII-1). Similarly, respondents to the online teacher survey provided an average score of 9.0 regarding their self-efficacy to implement cooking activities (Exhibit VII-2). Nearly all teachers reported that they chose to prepare ingredients for CookShop cooking activities ahead of time because it would be too chaotic or time consuming to have the class cut or prepare ingredients during the time allotted for CookShop Classroom, especially for teachers with special needs students or without additional adult support in the classroom. While some school administrators give CookShop teachers extra time to prepare, washing and cutting ingredients can take teachers their entire prep or lunch period, approximately 45 minutes, even for teachers who reported recruiting a small group of students to help.

*And then preparing and cutting things up. Just because we have one period for CookShop and I think the lessons would take longer if we would have the students prepare everything. So what we did was we would prepare part of it. Like with the experiment today. So I did it the day before. So we had to make*



*some modifications in order to fit it in the time we had allowed and the space.*

*—CookShop Teacher*

*[Older students help me prepare] on my lunch hours, [...] if this had been a cook day, we would have been in the classroom and I would have been chopping stuff up ahead of time because there are some preparations that you have to do.*

*—CookShop Teacher*

### Student response to cooking activities

The success of the CookShop cooking activities can be attributed largely to student enthusiasm for food tasting and assembling the recipes, as reported by interviewed teachers. Nearly all interviewed teachers asked their students to try all CookShop foods. While some students would make faces after trying the foods, many were surprised that they enjoyed a new food and frequently asked for seconds. According to many interviewed teachers, the most popular recipe was fruit salad; other foods and recipes, such as those involving kale and raw vegetables, were less popular. Interviewees believed that their students' were more willing to try these new foods during a CookShop lesson than they would have been in the cafeteria, for example, because they developed a sense of ownership by helping to prepare the recipe and because they saw their friends tasting the foods. The most frequent suggestion offered by interviewees is for CookShop to offer more opportunities to try additional recipes and for increased portion sizes, which were especially small in large classrooms.

*Another thing I think is great is there's foods [and students say], "I'm not trying that. Ew! Ew! I don't eat that! Ew!" Then all of a sudden, at the end, you see them, all their friends, and they're like, "Not so bad." They're eating it and you're like, okay. Parents say, "My kid would never eat that. They would never eat that." I'm like, "Yeah, they did."*

*—CookShop Coordinator*

*The apple I think we put [them] in the salad. And they were like, the apples in there and they were like, "[Teacher], to make it better, let's put more apples in there!" More apples, one person said I like more chickpeas. And you know, "mm-hmm."*

*—CookShop Teacher*



## D. PHYSICAL ACTIVITY COMPONENT

Among the components if CookShop scored by interviewed teachers (shown in Exhibit VII-1), physical activity was perceived as the least successful, receiving an average score of 5.9 (range: 1-10, n=15). However, one-third (n=10) of teachers avoided providing a numeric score for the perceived success of this segment. Those who spoke positively about the physical activity component said that students enjoyed getting out of their seats and integrating more movement into the day. Teachers who gave a low rating for the physical activity component believed that healthy eating was the primary focus of CookShop. Teachers also commented that there was not enough time for implementation due to the intense focus on academics or because students lost focus during the physical activities; a couple of teachers mentioned that they did not notice a physical activity component in the lesson plan. School staff in 6 of the 12 schools selected for an onsite visit report that they implement a classroom-based movement program other than CookShop (e.g. Move-to-Improve, Go Noodle!). Moreover, teachers may have already implemented regular physical activity breaks using another program throughout the school day in place of the activity suggested by CookShop.

*Yeah, just haven't, [...] by the time we get through eating, cleanup, and the preparation, there's no real time [for the physical activity component] because I have to get back to [...] the stuff that's on the test.*

*—CookShop Teacher*

*Well, like in the wrap-up piece, [...] they do infuse a bit of physical activity into the lesson. So what a lot of the teachers have done is they've taken [...] Move-to-Improve, and put that into the wrap-up activity as well. So we've increased a lot of physical activity within the program also. We've modified it a bit.*

*-- CookShop Coordinator*

*So we have been implementing the Go Noodle or the Move-to-Improve to show that healthy eating and healthy movement are one in the same. They go together.*

*-- CookShop Coordinator*

### Student response to physical activity component

Many teachers spoke in detail about other physical activities they implement in their classroom through Move-to-Improve and Go Noodle! Teachers report that physical activity must be strategically integrated



into the school day in order to maintain student focus and control over their classroom. For this reason, it is reasonable to believe that some teachers may replace the CookShop physical activity component with an activity from another program and implement it at a more opportunistic time. Overall, teachers indicated that students enjoy physical activity breaks in the classroom, however, lack of space for these activities prevents some from teachers from implementing them in the classroom-.

## E. EXPANDING STUDENT KNOWLEDGE

Interviewed teachers were asked about the success of CookShop in expanding student knowledge about healthy eating and physical activity. On the 1 to 10 scale, interviewed teachers rated their success in expanding student knowledge as an average of 8.4, with scores ranging from 4 to 10 (Exhibit VII-1). Teachers indicated that their students learned a lot about the different food groups and healthy eating and have been exposed to new foods that they might otherwise not have the opportunity to try. Overall, interviewed teachers agreed that the messages about healthy eating resonate with students and many believe that students are continuing the conversations about CookShop lessons at home with parents and with their peers. Interviewees noted that students comment on whether their snacks are “Go!” or “Whoa!” foods,<sup>44</sup> are proud when they have a healthy snack, and chastise teachers who consume “Whoa!” foods.

*They drink milk, they just don't know there are different options. They eat white rice every day, they just don't know that there's an alternative, there's a better choice. At home, white rice or spaghetti is what you're eating because that's what's cooked for the night. So for them to be able to know there are choices and explore around things, that's extremely [beneficial].*

—CookShop Teacher

*I know that they're talking about the foods that are being served in the cafeteria. They're challenging each other when they're bringing in stuff from around the corner store, things like that. Those conversations are taking place.*

—CookShop Administrator

Most teachers expressed that without CookShop their students would not be exposed to information about healthy eating. However, teachers did not share this same sentiment about physical activity, perhaps because there are several other physical activity programs in the schools. Several teachers were hesitant to provide higher scores because they did not believe physical activity was the emphasis of the

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<sup>44</sup> A recurring theme in CookShop Classroom lessons is that foods can often be described as Go!, Slow!, or Whoa! foods, depending on the frequency they should be consumed. Go! foods include fruits, vegetables, and whole grains; Slow! Describes foods such as canned fruits and vegetables and pasta; Whoa! foods include fried foods, sweets, and flavored milks.



program. As discussed in the CookShop Classroom Observation Findings section, several teachers, particularly for grades 3-5, did not implement the physical activity portion or discuss the “food is fuel” concept included in the CookShop curriculum during observed classes. However, evaluators were only present for approximately one hour in each classroom; it is possible that teachers chose to implement a classroom-based physical activity at another time of day. Other teachers noted that the physical activities conducted through physical education, recess and other programs (e.g., Go Noodle!, Move-to-Improve) have a greater impact on student knowledge of physical activity than CookShop.

## F. CHANGING STUDENT BEHAVIOR

In the online surveys, teachers were asked to rate their level of certainty that they can influence their students’ healthy eating and physical activity behavior outside the classroom. They rated both at 7.8 prior to implementation of CookShop, and around 7 on average after implementation, on a scale of 1 to 10, where 10 is absolute certainty (see Exhibit VII-3). During onsite visits, teachers discussed changes they have seen in their students’ behaviors and the conversations that take place in the classroom about healthy eating and physical activity. In addition, interviewed teachers were asked to score the success of CookShop in changing student eating and physical activity behaviors on a scale of 1 to 10, as described in Exhibit VII-4. Many teachers (9 and 11, respectively) did not provide a numeric score when prompted; however, their responses were considered when interpreting overall findings presented in this section. It is important to note that behavior changes mentioned by teachers are anecdotal and could be biased. For example, teachers may be influenced by social desirability bias or the tendency of interviewees to offer information that they think will be viewed favorably. Scientifically valid changes in behavior are presented in the Impact Evaluation sections of this report.

**Exhibit VII-3. Surveyed teachers’ self-efficacy of their ability to change student behavior outside the classroom, scored on a scale of 1 to 10 where 10 is absolute certainty that they can complete the task.**

	Pre-implementation n=88	Post-implementation n=34
Targeted behavior	Average score (range)	Average score (range)
Student eating behaviors	7.8 (2, 10)	6.8 (3, 10)
Student physical activity	7.8 (2, 10)	7.2 (4, 10)

Source: Online Teacher surveys

**Exhibit VII-4. Interviewed teachers’ perceived success of CookShop’s ability to change student behavior, scored on a scale of 1 to 10**

Targeted behavior	N <sup>a</sup>	Average (range)
Student eating behaviors	16	6.3 (0, 10)
Student physical activity	14	5.8 (1, 10)

<sup>a</sup>N indicates the number of teachers who provided a numeric score for the respective topics.

Source: Onsite Teacher Interviews

### Student eating behaviors

Interviewed teachers (n=16) scored the success of CookShop in changing student eating behaviors an average of 6.3 (range: 0 to 10) on a scale of 1 to 10. Many teachers hesitated to provide a higher score,



or any score, for this measure because they understand that students do not have control over the majority of their food choices and CookShop does not adequately address the societal, environmental and cultural factors that shape their families purchasing choices. For these reasons, the greatest overall success of CookShop from the perspective of the interviewees is that students began to have discussions about the healthfulness of their snacks and lunches. However, despite the limitations of CookShop, 13 interviewees from 8 of the 12 schools saw a noticeable improvement in the foods their students bring for snacks, choose in the cafeteria or ask for at home.

*And we see an increase in students just taking an apple or some of them are even bringing in food from home that is apples or grapes, and today, mango and carrots. And they're taking that initiative to tell their parents to box it up for them 'cause I'm sure their parents don't think about sending carrots to school or mangoes for breakfast.*

—CookShop Teacher

*A mother came in and said, "So I know my son is learning about healthy foods in school because I was running late, I didn't have dinner so I was going to just stop by McDonald's and pick up chicken nuggets. He told me, 'No, mom. I can't. That's a Whoa! food. We can't have it.'"*

—CookShop Coordinator

### Student physical activity

From the perspective of interviewed teachers (n=14), CookShop was less successful in changing students' physical activity levels, giving an average score in this area of only 5.8 on a scale of 1 to 10. As discussed previously and detailed in the following chapter, teachers, particularly those leading grades 3-5, often omitted the physical activity portion of the CookShop curriculum. Most teachers do not believe that the importance of physical activity was sufficiently emphasized in CookShop, and for this reason, CookShop was not as successful in changing students' activity levels.



## IX. CookShop Classroom Observation Findings

### A. TYPES OF LESSONS AND CLASSROOMS

Altarum evaluators conducted site visits to 12 first-year (n=10) and second-year (n=2) CookShop schools between February and April 2015. By observing approximately three classrooms at each school, a total of 15 pre-K-2 grade classrooms and 14 grades 3-5 classrooms were observed. The location of schools selected for site visits are provided in Exhibit VIII-1.

**Exhibit VIII-1. Characteristics of schools selected for site visits.**

Characteristic	Number of schools (n=12)
Year of implementation	
First year CookShop schools	10
Second year CookShop schools	2
Borough	
Bronx	2
Brooklyn	5
Manhattan	3
Queens	1
Staten Island	1

Source: Site Visit Classroom Observation Forms

Due to the different implementation calendars for pre-K-2 and 3-5 classrooms, as previously described, the tables below group observations in these two categories. As shown in Exhibit VIII-2 below, one or more lessons of all units/themes, except Unit 1, were observed. However, approximately half of observations in pre-K-2 and 3-5 classrooms were during Unit 4, Choose Whole Grains (Discovery lesson) and Unit 5, Discover Dairy, respectively.

**Exhibit VIII-2. Units and types of lessons observed**

Unit/Theme	Pre-K-2 classrooms			3-5 classrooms
	Explorer	Chef	Discovery	
Lesson Type				--
Unit 1: Meet MyPlate				
Unit 2: Focus on Fruit		1	2	1
Unit 3: Color York Plate		1		
Unit 4: Choose Whole Grains	2	2	7	2
Unit 5: Discover Dairy				7
Unit 6: Go Lean				4
Total		15		14

Source: Site Visit Classroom Observation Forms

As shown in Exhibit VIII-3, three classroom types were observed. The majority of observed classrooms across all grades (58.6%) were general education classes. All remaining classrooms were either integrated co-teaching (ICT) classes in which general and special education students are taught in one classroom led by two teachers (20.7%) or special education/combined grade level (20.7%) classes which typically had one teacher and one or more paraprofessionals either assisting the teacher or assisting one individual child.



### Exhibit VIII-3. Types of classrooms observed

Classroom types	Pre-K-2 classrooms % (count)	3-5 classrooms % (count)	Total/All grades % (count)
All classroom types	100 (15)	100 (14)	100 (29)
General education	60.0 (9) <sup>a</sup>	57.1 (8)	58.6 (17)
Integrated co-teaching (ICT)	26.7 (4)	14.3 (2)	20.7 (6)
Special education/ combined grades	13.3 (2)	28.5 (4)	20.7 (6)

<sup>a</sup> One classroom was a pre-kindergarten classroom using the curriculum designed for kindergarten.

Source: Site Visit Classroom Observation Forms

## B. CLASSROOM OBSERVATIONS

When observing CookShop lessons, evaluators completed an observation form to ensure consistency in assessing the classroom environment, teaching aids, methods, and materials as well as overall fidelity to the planned curriculum. Special attention was given to the key objectives and components of the lessons; however, Food Bank recognizes that teachers frequently make adaptations to CookShop to meet the needs of their students. As shown in Exhibit VIII-4, observed CookShop lessons in pre-K-2 classrooms lasted an average of 41.6 minutes, ranging from 16 to 55 minutes in duration, while lessons in 3-5 classrooms lasted an average of 45.9 minutes, ranging from 31 to 75 minutes. On average, 19.9 and 17.4 students participated in observed pre-K-2 and 3-5 classroom lessons, respectively, and approximately one student in each observed classroom did not attend the full lesson. Special education classrooms tended to have fewer students (approximately 8-12) than ICT or general education classrooms.

### Exhibit VIII-4. Reach and duration of observed CookShop Classroom lessons

Measure	Pre-K-2 classrooms		3-5 classrooms	
	n	Average (low, high)	n	Average (low, high)
Length of lesson	14	41.6 (16, 55) minutes	14	45.9 (31, 75) minutes
Reach	15	19.9 (10, 29) students	14	17.4 (8, 30) students
Reach – full lesson	14	18.9 (9, 29) students	14	16.9 (8, 30) students

Source: Site Visit Classroom Observation Forms

### Setting and space

Altarum evaluators surveyed the setting in which CookShop was delivered and noted facilitators or barriers related to setting and space. All observed CookShop lessons took place in traditional classrooms as opposed to other indoor or outdoor areas, as presented in Exhibit VIII-5. Most classrooms had ample space for the number of participants and planned activities (73.3% of pre-K-2 classrooms and 64.3% of 3-5 classrooms); approximately one-quarter of the classrooms had sufficient but somewhat limited space (26.7% and 28.6%, respectively); and one 3-5 classroom (7.1%) had insufficient space for the number of participants and activities planned.

Evaluators noted that ample space was a major facilitator to the successful delivery of CookShop, while insufficient space presented barriers to implementation. Classrooms with ample space encouraged students to sit around a single table, gather on the carpet or allowed the teacher to easily maneuver between aisles to engage students in the lesson. Other facilitators included the availability of paraprofessionals to assist with the lesson, small class sizes, accessibility to sinks in the classroom for handwashing, and tables arranged to allow students to work in small groups.



In addition to limited space, other barriers to the success of observed lessons included cluttered classrooms that made it difficult for students and teachers to move about, scheduled interruptions (e.g., vision testing, fire drill), student behavior disruptions, and missing materials or ingredients. The observed facilitators and barriers unrelated to the setting are discussed in subsequent sections.

### Exhibit VIII-5. Setting type and adequacy of space in observed classrooms

Description	Pre-K-2 classrooms % (count)	3-5 classrooms % (count)
Setting	(n=15)	(n=14)
In a traditional classroom	100 (15)	100 (14)
Indoors, general purpose room	0	0
Indoors, informal area not structured for group classes	0	0
Outdoor area	0	0
Adequacy of Space		
Space is very ample for the number of participants and activities planned	73.3 (11)	64.3 (9)
Space is sufficient but somewhat limited for the number of participants and activities planned	26.7 (4)	28.6 (4)
Space is insufficient for the number of participants and activities planned	0	7.1 (1)

Source: Site Visit Classroom Observation Forms

### Teaching methods and materials

The CookShop curriculum distributed by Food Bank to all teachers trained to implement CookShop provides a detailed overview of each lesson, including suggested open-ended questions, key messages, activities, and lecture-based information. While Food Bank recognizes that teachers may take some liberty in adapting the curriculum to fit their class needs, key components of the lessons should be delivered consistently. Exhibit VIII-6 below describes the various teaching methods employed by teachers during observed CookShop lessons. For pre-K-2 classrooms, two-thirds (66.7%) of observed teachers lectured students or provided a verbal presentation on the lesson, while 80.0% engaged the participants in discussions. Among 3-5 classrooms, all observed teachers (100%) incorporated both lecture and participant discussion in the CookShop lessons. Food tasting, which is a component of all lessons in the grades 3-5 schedule but only part of the chef lesson for those in grades pre-K-2, was included in all but 1 (92.8%) of the observed 3-5 classrooms and in 4 out of 10 (40%) of the observed grades pre-K-2 lessons. Similarly, movement/physical activity, a component of every lesson for grades 3-5, was observed only in 1 of the 14 lessons (7.1%).

### Exhibit VIII-6. Teaching methods utilized by observed CookShop Classroom instructors.

Teaching Method	Pre-K-2 classrooms (n=15) % (count)	3-5 classrooms (n=14) % (count)
Lecture/verbal presentation	66.7 (10)	100 (14)
Educator engages the participants in discussions	80.0 (12)	100 (14)
Story reading	13.3 (2)	14.3 (2)
Food preparation/demonstration	40.0 (6)	35.7 (5)
Food tasting	40.0 (6)	92.8 (13)
Movement/physical activity	53.3 (8)	7.1 (1)
Small group discussions or activities	40.0 (6)	28.6 (4)
Other	26.6 (4)	7.1 (1)

Source: Site Visit Classroom Observation Forms



A variety of teaching aids are provided by Food Bank to teachers delivering CookShop Classroom, such as a MyPlate poster, newsletters and take-home activities, a Chef’s Bin that includes reusable cooking materials, and Disposable Kit supplies, such as paper plates and utensils. The goal of these teaching aids is to enhance and reinforce lessons outlined in the curriculum, and teachers may incorporate other teaching aids as needed. Overall, teachers frequently incorporated the teaching aids provided by Food Bank. Teachers in 40.0% of observed pre-K-2 classrooms utilized the Big Book,<sup>45</sup> a teaching aid provided by Food Bank to teachers in pre-K-2 classrooms, or another storybook. Storybooks, while not part of the written curriculum, were incorporated by 14.2% of 3-5 grade classroom teachers. One 3-5 grade teacher read to her special education class during the grain unit *The Little Red Hen*, a tale in which a hen asks fellow farm animals for help harvesting and milling wheat in order to bake bread. Posters, such as MyPlate, were used as part of the lesson in nearly half (46.7%) of observed pre-K-2 classrooms and approximately one-third (35.7%) of observed 3-5 classrooms. Supplies from the Chef’s Bin and Disposable Kit were used more frequently in 3-5 classrooms than in pre-K-2 classrooms (57.1 and 64.3% compared to 33.3% and 53.3%, respectively), which is to be expected since cooking activities are included in each grades 3-5 lessons. Smart Boards, interactive touch-sensitive white boards, were the most frequently utilized teaching aid that was not provided by Food Bank. For example, in at least one classroom, students used a Smart Board to sort a variety of foods into Go! and Whoa! categories. Overall, Smart Boards were used in 33.3% of pre-K-2 classrooms and 42.9% of 3-5 classrooms.

#### Exhibit VIII-7. Teaching aids used in observed classrooms

Teaching aid	Pre-K-2 classrooms (n=15) % (count)	3-5 classrooms (n=14) % (count)
Storybooks or Big Book <sup>1</sup>	40.0 (6)	14.3 (2)
Posters	46.7 (7)	35.7 (5)
Handouts	20.0 (3)	28.6 (4)
Foods for activity/tasting	46.7 (7)	92.8 (13)
Chef Bin supplies <sup>2</sup>	33.3 (5)	57.1 (8)
Disposable Kit supplies <sup>3</sup>	53.3 (8)	64.3 (9)
Sample food labels	6.7 (1)	21.4 (3)
Smart Board	33.3 (5)	42.9 (6)
Food models	6.7 (1)	0
Music	6.7 (1)	0
DVDs or videos	13.3 (2)	7.1 (1)
Other <sup>4</sup>	40.0 (6)	21.4 (3)

Source: Site Visit Classroom Observation Forms

*Big Book* is a material provided to teachers teaching CookShop in pre-K-2 classrooms only.

Observed Chef Bin supplies include cutting board, apron, can opener, measuring cups, mixing bowl.

Observed Disposable Kit supplies include paper plates/bowls/cups, napkins, and utensils.

Other observed teaching aids include white board, notebooks, markers, Post-Its, BINGO cards, and trays.

Food Bank provides newsletters and take-home Discovery Sheet activities for each unit of the pre-K-2 and 3-5 CookShop curricula. Newsletters include an overview of the unit’s key messages, recipes and tips for parents to discuss or try with their children, while take-home activities help students relate CookShop lessons to foods consumed at home. As shown in Exhibit VIII-8, in a majority of observed

<sup>45</sup> Food Bank provides teachers with printed and an electronic versions of the Big Book, however this distinction was not made during classroom observations.



classrooms, no handouts were distributed (60.0% of pre-K-2 classrooms and 57.1% of 3-5 classrooms). However, teachers noted during interviews that they assemble take-home folders containing all handouts and newsletters; it is possible that CookShop materials were included in these folders rather than disseminated during the observed lesson.

**Exhibit VIII-8. Materials distributed during observed lessons.**

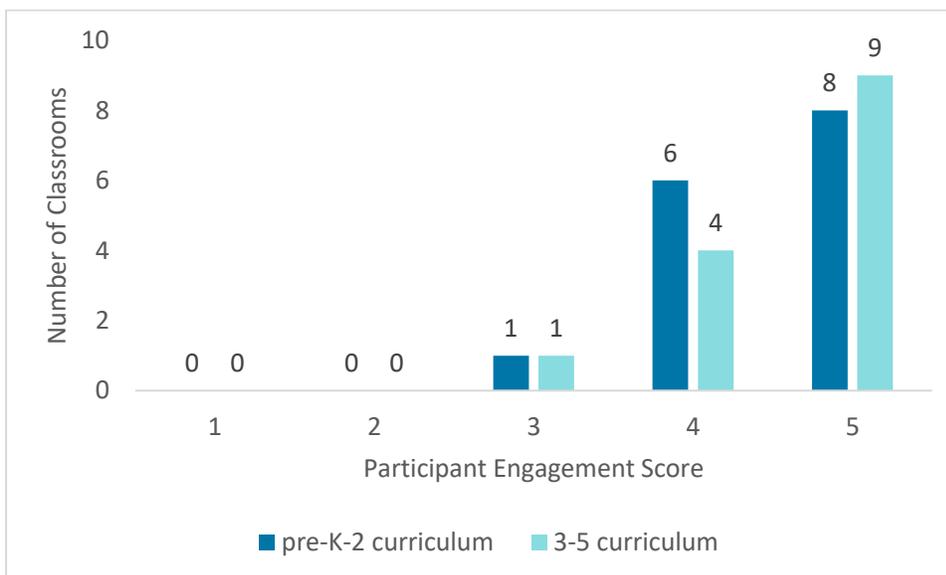
Materials Distributed	Pre-K-2 classrooms (n=15) % (count)	3-5 classrooms (n=14) % (count)
Recipes	6.7 (1)	0
Newsletter	0	7.1 (1)
At-home Discovery Sheet	6.7 (1)	14.3 (2)
Other handouts	13.3 (2)	28.6 (4)
Other	6.7 (1)	0
None	60.0 (9)	57.1 (8)

Source: Site Visit Classroom Observation Forms

**Student engagement**

Altarum evaluators assessed student engagement throughout the observed CookShop Classroom lessons. On a scale of 1 to 5 (low to high engagement), evaluators rated student engagement in pre-K-2 and 3-5 classrooms as 4.5 and 4.6 on average, respectively. The distribution of ratings is depicted in Exhibit VIII-9. In the two classrooms that received lower scores, some students were disruptive or chatting with other students and had to be disciplined by the teacher while the teacher was delivering the lesson resulting in distractions from the planned activities. Although a few behavioral disruptions were noted, classrooms with an engagement rating of 4 had students that appeared to be mostly engaged and participating in discussions. Classrooms with the highest levels of student engagement had students that participated actively in discussions, enjoyed preparing and tasting foods, and focused on and were excited about the lesson.

**Exhibit VIII-9. Participant engagement rating during observed CookShop Classroom lessons, scored on a scale of one to five.**



Source: Site Visit Classroom Observation Forms



While students demonstrated an overall high level of engagement during CookShop observations, Altarum evaluators noted that certain parts of the lesson were more engaging than others. Unsurprisingly, students were most engaged during the hands-on activities. In pre-K-2 classrooms, students appeared to enjoy food tasting/demonstration, the physical activity segment, sharing their perspectives, and other hands-on activities. Food tasting/demonstration was by far the most popular activity among students in the 3-5 classrooms.

Altarum evaluators also assessed the appropriateness of the observed CookShop lessons as delivered by the teachers. Overall, most lessons were deemed to be age, literacy level and culturally appropriate for the students. Some of the activities deemed less appropriate were developed by the teacher. For example, one teacher developed a BINGO game depicting unconventional grains (e.g., millet) which made the game difficult for the students with learning disabilities in her ICT class to understand. Another teacher created a slideshow based on the lesson plan that appeared to exceed the literacy level of her students, many of whom were ELL students. At least two teachers increased the cultural appropriateness of the lesson by translating the lesson into another language and discussing cultural foods. As illustrated in Exhibit VIII-10, most information presented to students appeared to be new; students in a few classes appeared have familiarity with the lesson topics, particularly when the lesson was a review (Chef or Discovery lessons in pre-K-2).

**Exhibit VIII-10. Perceived appropriateness of observed lessons**

Lesson was...	Pre-K-2 classrooms (n=15) % (count)	3-5 classrooms (n=14) % (count)
Age appropriate	86.7 (13)	100.0 (14)
Literacy level appropriate	100.0 (15)	92.9 (13)
Culturally appropriate	100.0 (15)	92.9 (13)
New information for participants	80.0 (12)	92.9 (13)

Source: Site Visit Classroom Observation Forms

**Fidelity to planned curriculum**

Acknowledging that Food Bank grants teachers some flexibility to tailor CookShop to meet the needs of their students, Altarum evaluators assessed fidelity to the planned curriculum. Overall fidelity was assessed relative the extent to which the teacher included the main components of the lesson (e.g., cooking or other activities, instructional material, discussions, physical activity) and sufficiently discussed the key objectives and messages. Slightly less than half (46.7%) of teachers in pre-K-2 classrooms and almost two-thirds (64.3%) in 3-5 classroom maintained overall fidelity to the planned curriculum. Evaluators noted that several teachers did not follow the instructional portion of the lesson plan (e.g., omitted the “recap” at the beginning of the lesson, insufficient discussion during food tasting) or did not complete all activities outlined in the curriculum (e.g., Discovery Activity, scavenger hunt, review of take-home activities, physical activity).

Key messages are outlined clearly in the CookShop curricula provided by Food Bank. While 86.7% of pre-K-2 teachers covered the key messages in observed classrooms, only half (50.0%) of teachers in 3-5 classrooms gave sufficient attention to these topics. For example, some teachers did not fully discuss whole grains, the importance of making half of your grains whole or how to find out if a food is whole grain by reading a food label. The “food for fuel” concept was also frequently omitted in observed classes for all grades. Furthermore, 4 in 10 teachers in K-2 classrooms (40.0%) and approximately one-



quarter (28.6%) of teachers in 3-5 classrooms did not connect in-class learning to school meals. However, it should be noted that many classrooms served special education students and the teacher may have deemed some of the more complex topics too advanced for their students.

While many teachers did not adequately follow the planned curriculum, two-thirds (66.7%) of pre-K-2 teachers and approximately 43% of 3-5 teachers extended learning activities beyond the CookShop curriculum. For example, a teacher used the same BINGO game that was unsuccessful in an ICT class with general education students and successfully exposed them to new types of grains while integrating literacy, while another teacher read a food-related story to children. One teacher indicated that the writing topic later that day would be a reflection on CookShop.

**Exhibit VIII-11. Fidelity to planned curriculum for observed lessons**

	Pre-K-2 classrooms (n=15) % (count)	3-5 classrooms (n=14) % (count)
Followed the planned curriculum overall	46.7% (7)	64.3% (9)
Key messages covered	86.7% (13)	50.0% (7)
Teacher connected in-class learning to school meals	40.0% (6)	28.6% (4)
Teacher extended learning activities beyond CookShop curriculum	66.7% (10)	42.9% (6)

**Implementation schedule**

After each observed CookShop lesson, evaluators asked teachers the brief questions contained in Exhibit VIII-2. Two-thirds (66.7%) of pre-K-2 teachers and half (50.0%) of 3-5 teachers reported that they had deviated from the day’s written lesson plan. Six of the pre-K-2 teachers added or changed an activity to better meet the needs of their students. For example, one teacher set up small bowls at different stations to allow more children to engage in cooking activities and another added a video about making bread. One pre-K-2 teacher admitted that she did not have time to read the lesson before class. Three teachers in 3-5 classrooms said they deviated from the lesson plan because they ran out of time to do an activity; three switched the order of the components for better flow; and two adjusted the lesson to meet the needs of their students. One teacher mentioned that she regularly skips the physical activity component because it feels too young for her class. In general, teachers leading special education classes made more modifications to the lesson in order to meet the unique needs of their students.

When interviewed teachers were asked whether they had completed all lessons to date, all (100%) grades pre-K-2 teachers and over three-quarters (78.6%) of grades 3-5 teachers responded positively, indicating that they were on schedule. At least one school was on a one-week delay due to a snow storm, but they had communicated this to Food Bank and were still scheduled to complete all CookShop lessons. Among teachers that had not followed the implementation schedule, one grades 3-5 teacher noted that she had to switch between the first and second grade curricula because she had received different materials than were included in the lesson plan. Another grades 3-5 teacher told evaluators that the upper grades at her school were implementing one lesson per month due to required, ongoing testing. One teacher at PS 38, a school with which Food Bank experienced challenges, admitted that her school had not delivered CookShop for the past month, although it had planned to implement weekly (she was unsure of the reason for the delay).



*[Our school decided to implement CookShop on a monthly schedule because all of our CookShop classes are] testing grades, [and] we only have six lessons. So, we went December, January, February, March, April, then May will be our last one. So because, if we waited, if we did it every week it probably would have run into the preparation for the state testing.*

—CookShop Teacher

### Exhibit VIII-12. Post-lesson questions to teacher

	Pre-K-2 curriculum % (count)	3-5 curriculum % (count)
Did you deviate from the lesson plan?	n=12	n=14
Yes	66.7% (8)	50.0% (7)
No	33.3% (4)	50.0% (7)
Have you completed all lessons to date?		
Yes	100%(12)	78.6% (11)
No	0	21.4% (3)

### Role of the teacher and other adults

In all observed classrooms, the teacher was the primary or only adult leading the lesson. Exhibit VIII-13 shows that teachers played an active role in delivering CookShop in all observed classrooms; in only one of the observed grades 3-5 classrooms the teacher heavily assisted in delivering the lesson. As previously mentioned, ICT classrooms have co-teachers and both were observed delivering the lessons, although it is unclear whether one or both teachers participated in the Food Bank training. Paraprofessionals that assisted special education teachers most likely did not receive formal CookShop training.

### Exhibit VIII-13. Role of teacher in observed lessons

Teacher involvement	Pre-K-2 classrooms % (count)	3-5 classrooms % (count)
Led the delivery of the CookShop lesson	100 (15)	100 (14)
Delivered the lesson him/herself alone	40.0 (6)	35.7 (5)
Assisted in the delivery of the CookShop lesson	0	7.1 (1)
Silent observer who did not participate or support the educator during the lesson	0	0
N/A—absent from the classroom during the lesson	0	0
Other roles, if any, that the teacher played in delivery of the CookShop lesson	0	0

Other school staff members or volunteers were present during delivery of CookShop in nearly three-quarters (73.3%) of pre-K-2 classroom and two-thirds (64.3%) of 3-5 classrooms, as outlined in Exhibit VIII-14. There was often more than one additional adult present during most of these observed lessons. In over half (54.5%) of pre-K-2 classrooms and one-third (33.3%) of grades 3-5 classrooms, one of the



other adults in the classroom was another classroom teacher, which may have been the co-teacher in ICT classrooms or another teacher. Approximately two-thirds of pre-K-2 and 3-5 classrooms (63.6% and 66.7%, respectively) had between 1 and 5 classroom aids or assistants, frequently referred to as paraprofessionals (or “paras”) by the teachers, present during the CookShop lesson. The Coordinator was present during one observed lesson and a parent volunteer assisted during another.

The other adults present during observed lessons served various roles. While a few of the adults, mostly another classroom teacher, helped lead the CookShop lesson, they did not deliver the lesson by themselves in any of the observed classrooms. More frequently, the other adult(s) assisted the educator by handing out materials and other activities, helping children focus, answering questions during activities, and contributing to group discussions. Other adults in approximately 1 out of 5 classrooms (18.2% in pre-K-2 and 22.2% in 3-5 classrooms) were silent observers who did not participate or otherwise provide support to the teacher; many of these observers were one-on-one teachers for children with specific needs. Based on evaluator observation, having multiple adults present in the classroom greatly facilitated the delivery of CookShop Classroom; this observation was supported by teacher interview responses.

*It’s very helpful because in the ICT model there’s a gen-ed teacher and a special-ed teacher, and we also have one private professional in the room so there’s three adults. Honestly, I would say if I was by myself it would be a lot. I wouldn’t advise anyone to do it by themselves just because with the cleanup and getting everything organized and making sure kids aren’t cutting themselves or wiping their nose and then putting it on the food, there’s always something to oversee.*

—CookShop Teacher

**Exhibit VIII-14. Role of other school staff or volunteers in observed lessons**

Teacher involvement	Pre-K-2 classrooms (n=15) % (count)	3-5 classrooms (n=14) % (count)
Classrooms with other school staff or volunteers involved	73.3 (11)	64.3 (9)
Position of other staff or volunteers, if involved		
Another classroom teacher	54.5 (6)	33.3 (3)
Classroom aid or assistant	63.6 (7)	66.7 (6)
CookShop Coordinator	9.1 (1)	0
Parent or community volunteer	9.1 (1)	0
Role of other person during lesson		
Led the delivery of the CookShop lesson	18.2 (2)	0
Silent observer who did not participate or support the educator during the lesson	18.2 (2)	22.2 (2)
Assistant to the educator in handing out materials	45.5 (5)	55.6 (5)
Assistant to the educator in activities beyond handing out materials	36.4 (4)	66.7 (6)
Delivered the lesson him or herself	0	0
Other roles that the individual played in supporting the lesson delivery	27.3 (3)	22.2 (2)



## Classroom environment

As discussed in section IV, the school environment interacts with students' healthy eating and physical activity choices and can reinforce or undermine the goals and messages of CookShop. Altarum evaluators looked for indirect messages (e.g., posters, displays, bulletin boards, sodas, unhealthy foods) that were supportive of or in conflict with the CookShop lessons (see Exhibit VIII-15). Messages that were supportive and aligned with CookShop's goals and objectives were viewed more frequently in or around grades pre-K-2 and 3-5 classrooms (46.7% and 35.7%, respectively) than conflicting messages (33.3% and 14.3%, respectively). Examples of supportive messaging include a mathematics display containing drawings of fruits and vegetables on paper plates, a "rules of CookShop" poster, Mighty Milers water bottles and t-shirts worn by students and staff, and a colorful poster that promotes the foods that are good for different parts of the body. Promotional materials for CookShop, such as announcements or bulletin boards in the common areas, were present in all but two of the schools selected for onsite visits. Conflicting messages observed by evaluators included candy on a teacher's desk, unhealthy student snacks and a PTA-run store selling candy, chips and sugary drinks. It is unclear whether these practices were in conflict with existing school policy but demonstrate the opportunity to increase school staff awareness about the interaction between the school environment and messages promoted by CookShop.

**Exhibit VIII-15. Presence of supportive and conflicting messages in schools and classrooms selected for onsite visits**

	Pre-K-2 classrooms % (count)	3-5 classrooms % (count)
Supportive messaging	46.7% (7)	35.7% (5)
Conflicting messaging	33.3% (5)	14.3% (2)



## X. Summary

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### A. PROGRAM IMPACT

#### Healthy eating behaviors

CookShop participation was associated with improvements in some healthy eating behaviors. In particular, CookShop children increased their willingness to try new fruits and vegetables, decreased SSB consumption and increased whole grain consumption significantly more than comparison school children after controlling for demographic characteristics. Despite the smaller than expected sample size, which lowered the statistical power, these important findings clearly demonstrate that CookShop has a positive impact on healthy eating. Additionally, children who participated in CookShop consumed more cups of fruits and vegetables on a typical day after being exposed to the program, however, these changes were not significantly different than those observed among comparison school children. With a larger sample, it is possible that changes in consumption would have been identified as statistically significant.

CookShop does not appear to have a strong impact on the types of foods parents are serving children at home. For example, parents who reported offering fruits and vegetables as snacks or with meals decreased among CookShop children yet increased among comparison school children during the study period. Limited parent engagement in CookShop, as documented through the process evaluation, may hinder the program's ability to influence behavior at home.

#### Food Resource Management

Rates of food insecurity in the study sample were found to be considerably higher than the national and state averages, and CookShop parents reported increased levels of food insecurity at the 6-week follow-up compared to baseline. Food security is a complex issue influenced by many factors that insufficiently addressed by CookShop Classroom. Seasonality may be a factor in the rise in food insecurity, since the baseline survey was implemented in December while children are receiving up to 2 meals a day at school 5 days per week and the 6-week follow-up survey was implemented in the summer months when many children do not have access to free meals.

Although not significantly different than comparison school children, the frequency with which CookShop children asked their parents to purchase a certain fruit or vegetable increased during the intervention and continued to increase after the intervention. It is possible that exposure to new foods through CookShop is leading children to ask for certain foods; however, without statistical significance, no definitive conclusions can be drawn.

Despite high levels of food insecurity, parents indicated at baseline a high degree of self-efficacy relative to selecting fresh fruits and vegetables. Additionally, most agreed that there is a large selection of fruits and vegetables available where they shop and they can afford fresh fruits and vegetables. Measureable improvements in these areas during the study period were not observed or highly anticipated.

#### Physical activity and reduced sedentary behavior

Children who participated in CookShop decreased the amount of time they spend in front of a screen



(not for school work) significantly more than comparison children and increased the number of days in which they participated in 30 minutes of physical activity, which was significantly higher than comparison children at the 1-week follow-up survey. Timing of survey administration likely influenced increases in physical activity observed among both CookShop and comparison school children—baseline surveys were administered in December and follow-up surveys were administered in spring or early summer. Despite a potential seasonal effect on physical activity pre- to post-intervention and less than ideal fidelity to the physical activity component, CookShop children improved more than the comparison children on physical activity and reduced sedentary measures indicating that an association exists between CookShop and these positive behavior changes. As discussed in sections IV-C and VII-D, there has been an increased emphasis on physical activity in NYC schools in recent years and a variety of physical activity programs are being implemented. Due to their involvement with CookShop, teachers in intervention schools may have a heightened awareness of other healthy interventions and be more likely to implement classroom-based physical activity sessions than teachers in comparison schools, contributing to the improved rates of physical activity and reduced sedentary behavior observed among CookShop students. The frequency with which teachers implemented physical activity in their classrooms was not directly measured in this study.

### Family meals

Although the difference was not statistically significant, the average number of meals eaten at home increased among CookShop children and decreased among comparison school children. As with other findings, a larger sample may have been able to detect statistical differences between these observed trends. On average, all families ate dinner together most days per week (5 days per week); this finding remained consistent throughout the study period. Parent behaviors, such as eating fruits and vegetables as snacks and with dinner, also remained fairly constant and did not differ between the CookShop and comparison groups.

## B. PROGRAM SUPPORT AND IMPLEMENTATION

Many successes were documented through the CookShop process evaluation. This section summarizes key successes identified by stakeholders and observed by evaluators. Noteworthy challenges and barriers are also described, along with suggestions made by program implementers.

### Support

Support for CookShop within schools and communities is essential to maximizing the program's effectiveness, sustainability and integration into other curricula and student life. Based on information gleaned from interviews and surveys with key stakeholders, **administrators were highly supportive of the program, and in about half of the schools, administrators initiated discussions about bringing CookShop to their school.** Administrators were more involved prior to implementation of CookShop and their early support provided the foundation for successful implementation. For example, administrators allowed for schedule flexibility to offer extra time for preparation. Upon implementation, administrator involvement with CookShop generally tapered off, with the exception of administrators who served as the CookShop Coordinator and remained highly involved with program operations.

**Community support for CookShop was less apparent.** Among evaluation schools that implemented CookShop for Families during the intervention period, parent attendance was typically low. The goal of



CookShop for Families is to engage the whole family in making healthy choices. By targeting other members of the student's household and community, CookShop for Families expands the intervention beyond the individual-level of the SEM; however, low attendance and engagement limits the influence of this program component. In a small number of schools, CookShop for Families was well attended and those in attendance were enthusiastic about the program. Even at full capacity (approximately 25 participants), this component of the program has the potential to touch only a small percentage of families. Moreover, it is possible that the program fails to reach parents that need it most. Lack of parent engagement is a pervasive issue at CookShop schools and not necessarily a poor reflection of the program. Still, this issue underscores both the importance and challenge of engaging students and their families in CookShop activities outside of the classroom. This presents the opportunity for Food Bank to work with schools to increase parent engagement by offering desirable workshops, which can be leveraged to disseminate messages regarding healthy eating and physical activity.

### STAKEHOLDER SUGGESTIONS AND RECOMMENDATIONS

*To increase community support, Food Bank could:*

- Increase CookShop for Families class sizes and change recipes each year;
- Increase marketing to parents about CookShop (e.g., hang CookShop banner outside the school, provide free samples to parents while promoting CookShop for Families);
- Provide more options for community outreach and parent engagement (e.g., hold seminars to promote other programs or provide education, help facilitate increased food accessibility and reduce barriers to healthy foods); and
- Provide CookShop and CookShop for Families materials in multiple languages (English, Spanish, Chinese, Russian, Urdu).

*I wish they gave us more leeway to understand about the language, and maybe even in the cafeteria, to bring it into the cafeteria. They could even say, "What's the Whoa! food for today," or, "What's the Go! food for today?" There really is a go food all the time, but I don't think the kids realize that they're baked fish sticks with a coating on them. I don't think they realize the connection that the food in the school does for them and why we eat the way we do in school.*

*-- CookShop Teacher*

*It's very expensive to eat healthy and in most public school neighborhoods you have children with parents who work two jobs and it's very hard for them to always afford the healthier choice. So maybe resize the recipe if there could be another component where they look into eating healthy on a budget or helping parents look for sales, things like that.*



-- CookShop Teacher

*I would like to [have] people from other organizations coming in and talking about healthy eating, even if it's from CookShop, if we have some resources that we could contact that would come in and also talk to our parents.*

-- CookShop Administrator

## Implementation

CookShop implementers and students were enthusiastic about the program overall. Although many of the first-year and second-year CookShop implementers experienced an initial learning curve, the support they received from Food Bank and grocery store partners was positive and helped to facilitate ongoing and successful implementation of the program. Food Bank reports an average school retention rate of 87.3% year-after-year, which further demonstrates the high quality support they provide and suggests that returning schools find the program easier to implement. Implementers felt that the training provided by Food Bank adequately prepared them to implement the program, despite some displeasure with the training location and other logistical challenges. Implementers also found the lesson plans easy to follow and utilized supportive materials supplied by Food Bank.

Some issues related to program fidelity were observed among the first- and second-year CookShop schools, however, and may point to opportunities for improvement. For example, movement or physical activity, a component of every lesson for grades 3-5, was only implemented in 1 out of 14 observed classrooms and evaluators noted that about half of observed 3-5 grade teachers did not give sufficient attention to key messages outlined in the CookShop lesson plan. Still, the impact evaluation detected significantly greater improvements in physical activity and reduced sedentary behaviors among CookShop students compared to their comparison school counterparts. This finding suggests that CookShop teachers may be implementing the physical activity component at a more convenient time of day (which would not have been apparent during site visits) or are perhaps utilizing other classroom-based physical activity interventions or otherwise promoting physical activity more than comparison school teachers. Other fidelity issues identified through observation are that a majority of observed teachers did not connect in-class learning to school meals and in a few cases teachers developed or incorporated activities that were not age-appropriate.

During CookShop lessons, students were engaged, learned new information about healthy eating in particular, and enjoyed preparing and tasting recipes. Not surprisingly, cooking activities were students' favorite component of CookShop and identified by teachers as the most successful part of the program. Even so, finding time in the day to prepare ingredients was a challenge noted frequently by program implementers.

Anecdotally, teachers remarked on and related changes in their student's behavior to CookShop (e.g., bringing healthier snacks to school). However, when asked to rate the success of CookShop in changing student eating behaviors, many teachers hesitated to indicate a high level of success because they understand that students do not have control over the majority of their food choices and CookShop Classroom does not adequately address the societal, environmental and cultural factors that can



influence family shopping and purchasing patterns.

Based on stakeholder input and observation, the physical activity component of CookShop was less successful overall compared to other components. In general, teachers felt that the physical activity students receive through physical education, recess and other programs (e.g., Go Noodle!, Move-to-Improve) have a greater impact on student knowledge of physical activity than CookShop, and as previously noted, many teachers skipped altogether the physical activity/movement and “Food is Fuel” components of CookShop lessons.

In addition to challenges related to ingredient preparation time and a less than desirable level of satisfaction with the physical activity component of CookShop, teachers also expressed frustration with required verification activities, which they struggled to remember to complete and faced several technological difficulties. For example several Coordinators reported that they must complete verification activities for the teachers who neglect to do so or experience technical challenges.

### STAKEHOLDER SUGGESTIONS AND RECOMMENDATIONS

*To improve the CookShop curriculum, Food Bank could:*

- Offer more hands-on or visual activities (e.g., PowerPoints, books) for teachers to choose from and incorporate into lessons;
- Adjust the curriculum for the youngest students to be more age-appropriate;
- Offer more options for food tastings (e.g., pita bread, whole wheat crackers, bread);
- Provide larger portion sizes or make grocery orders proportional to classroom size;
- Make curriculum more age-appropriate for lower grades;
- Extend CookShop programming for grades 3-5, adding more weeks either by covering the same topic for multiple weeks or adding additional themes; and
- Integrate math into the curriculum (e.g., when teaching portion sizes or reading nutrition labels).

*But I think kids this age really need pictures and more story-inclined nonfiction books. And for teachers who have books in their classroom to pull, that's great, but a lot of people don't have books about cows or bread or beans.*

*-- CookShop Teacher*

*To enhance the already high level of support and technical assistance it provides, Food Bank could:*

- Consider providing CookShop training online, via webinar or onsite (in schools) to increase the number of teachers participating in the program;
- Create a platform for teachers from different schools to share success stories and innovative ideas, and encourage successful teachers to provide examples; and
- Provide more online resources for teachers and increase the functionality of existing online resources (e.g., verification activities).



*I have to say maybe a little bit more finding some of the resources on their database. Sometimes it's a little hard to navigate where to find that extra activity in the database. I mean it's mentioned in the book. You do find it eventually, but you kind of have to look. So maybe making it a little bit more streamlined.*

*-- CookShop Coordinator*



## XI. Limitations

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Recruiting and retaining parent survey respondents was a major challenge of the impact evaluation. Although close to 10,000 baseline surveys were disseminated, only 124 parents responded to the 6-week post-intervention survey. The baseline response rate was lower than expected, below 10%, and response to at least one of the follow-up surveys was approximately 20%. Several factors, described below, contributed to the low response rates and actions were taken by the study team to address these issues and increase response as much as possible.

Initially, only first-year CookShop schools were enrolled in the study. This decision was strategic and intended to limit the influence of prior years' CookShop programming on the evaluation results. However, due to the program's high retention rate, only 24 new schools were enrolled in CookShop for the 2016-17 school year. Even though 19 of the new CookShop schools elected to participate in the study, more schools needed to be enrolled to meet sample size projections. For this reason, 4 second-year CookShop schools (began implementing CookShop during the 2015-16 school year) were also enrolled. Because some students in these schools were exposed to CookShop during the previous school year and prior to baseline data collection, program effects may have been masked. However, the survey sample from second-year schools was too small to be analyzed separately, thus it is unclear whether students from these schools were actually different at baseline from students enrolled in first-year schools. Additionally, of the 26 schools on the waitlist for CookShop, only 5 agreed to participate as comparison schools, thus limiting the size of the comparison group.

Baseline surveys were distributed as part of the informational packets teachers sent home from school with students. This dissemination method did not allow any way for the study team to follow-up with parents unless the parent mailed in the survey and completed the contact card, which contributed to the low response rates. Per NYCDOE IRB regulations, evaluators were not allowed to receive parent contact information from anyone other than the parent, and teachers/school staff were not permitted to email parents encouraging them to respond to surveys; as a result, options for following up with non-responders were limited. To circumvent these limitations, in February 2017 flyers with a link to an online survey were sent to CookShop and comparison schools and teachers were asked to send the flyer home in children's backpacks. The flyer served as a reminder to parents to respond and provide an alternative mode of completion (online versus paper). This approach proved to be effective as some parents responded to the online survey.

Another issue encountered by the study team was the timely distribution of incentives to parents who completed a survey. Survey respondents were offered gift certificates to a local grocery store for each completed survey (baseline, 1-week and 6-week follow-up). Challenges communicating with the market vendor delayed the delivery of the first batch of certificates; therefore, some parents were asked to complete a follow-up survey before receiving an incentive for their baseline survey. This delay likely caused some reluctance to participate in follow-up surveys. Subsequent incentives were mailed to participants promptly after completion of follow-up surveys.

As found in the process evaluation, parent engagement in schools served by CookShop is generally low. Many parents with children in CookShop schools face daily challenges that may limit their time or ability to engage in school-related activities; teachers noted that many parents work multiple jobs, which



constrains their time for engagement. Furthermore, teachers expressed challenges getting required documents turned in, such as permission slips and homework. These factors mostly likely contributed to lower than anticipated response rates, despite efforts to make the surveys as accessible as possible (e.g., offering both paper and online versions, offering incentives, and sending reminders via flyers, email and text message). Based on feedback from school staff, parent engagement is a pervasive challenge in CookShop schools and not a reflection of the program or the evaluation design.

There were language barriers for some parents who were contacted. In a diverse area like NYC, many different languages are spoken in some schools and principals indicated initially that this could impact response rates. The survey was provided in English and Spanish, the two most common languages in the study schools, and translation into other languages was explored; however, due to the number of different languages spoken in CookShop schools, this was neither a feasible nor cost effective option.

Despite challenges obtaining the estimated sample size, significant behavior changes in key outcomes were detected. Sample size estimates consider the smallest desired detectable effect size at a given power, however, a smaller sample is still able to detect larger effect sizes without compromising statistical power. The effect size for certain measured behavior changes (e.g., willingness to try new fruits and vegetables, SSB consumption, whole grain consumption and time spent in front of a screen) between CookShop and comparison groups was sufficiently large to detect statistical significance. With a larger sample size, it might have been possible to detect statistically significant differences between CookShop and comparison students for behaviors with smaller effect sizes.



## XII. Conclusion

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Programs, policies, and practices that expand access or improve appeal for healthy food and beverages create a supportive environment for healthy eating behaviors. The NYCDOE has established a solid foundation for improving the healthy eating environment in schools through its wellness policies and grant program and by providing free breakfast and lunch to students district-wide. A strategic \$100 million investment has also recently been made to strengthen physical education in NYC schools over the next four years. However more is needed to address existing health disparities, reduce barriers to healthy foods, and strengthen the connection between the school environment and lifelong healthy eating and physical activity behaviors. Programs like CookShop bring external resources into the school and help build capacity, increase knowledge and move the needle on healthy behaviors among staff and children, making CookShop uniquely positioned to expand its impact on the school environment and support desired behaviors.

Findings from the CookShop evaluation demonstrate the program's success and impact on staff, students and the schools in which they work and learn. Despite having a small sample size, measureable increases were observed in children's knowledge and behavior. Importantly, school and community enthusiasm for CookShop was evident, though more can be done to extend the program's scope and impact. Stakeholders engaged in the program and evaluation identified areas for improvement. Some of the offered suggestions are specific and implementation-focused, while others point to the need for increased community or parent engagement and the implementation, adoption and expansion of PSE change initiatives.

At the time of the study, Food Bank's engagement with schools around PSE change was somewhat limited and implemented primarily outside of the classroom. For example, Food Bank has provided schools with information about building healthier school environments, worked with key stakeholders to promote nutritious school meal programs and increase participation, and promoted family participation in programs that increase access to healthy foods in the retail environment. During the 2016-17 school year, while the evaluation was ongoing, Food Bank worked with the Cornell Cooperative Extension to refine the following two PSE strategies which it began adopting and implementing this year (2017-18 school year):

1. **Create a school environment where adults encourage and model wellness practices.** Food Bank has begun providing training, materials and support to CookShop schools to assist with developing healthier school settings through wellness policies/practices. The development and implementation of school wellness policies serve as a key framework for CookShop schools' efforts to create a healthy environment for children that supports nutritious food choices and physically active lifestyles.
2. **Create a school environment where the highest food insecure families have access to emergency food, and/or resources to better afford sufficient quantities of nutritious food.** Food Bank engages with participating schools in two ways: (1) establishing and maintaining on-site food distribution, funding permitting (called Campus Pantry), and (2) engaging school partners with off-site food distribution network, as well as SNAP screenings and enrollment, or referrals to area soup kitchens and food pantries (completed by non-SNAP-Ed staff).

Evidence from this evaluation suggests that schools need this kind of support. For example, the SNAP-Ed



Evaluation Framework indicates that, prior to adopting PSE change strategies (ST5: Readiness and Need), organizations should conduct a needs assessment, or a systematic process used to identify and describe the health and nutrition needs of a population and current gaps in meeting those needs. When asked whether a formal needs assessment related to healthy eating and physical activity had been conducted in their school, only 2 out of 26 school administrators responded positively. Moreover, many administrators were unfamiliar with this topic. It appears that Food Bank could assist schools (e.g., school wellness committee, administrators) by providing training and technical assistance relative to conducting a formal needs assessment.

According to the Framework, Champions for Change, or individuals who provide sustained and charismatic leadership that successfully advocates for, creates appeal for or improves access to nutrition and physical activity in their school environment, are essential for successful PSE change. In spite of this, Champions were identified by stakeholders in only about half of the evaluation schools. It was apparent during the evaluation that administrator support and involvement as the CookShop Coordinator increased buy-in and overall success of the program. It is reasonable to assume that the same would be true for implementing PSE change initiatives—administrator support and involvement will be key. Food Bank could potentially help schools develop approaches that address issues identified in their needs assessment. Importantly, including and actively engaging Champions and administrators may be critical to the success of these efforts.

Finally, once a school's needs are identified and staff are prepared for PSE change, Food Bank may be in a position to assist with implementation, depending on the agreed upon approaches. Although schools and their Champions need to take ownership to ensure sustainability, Food Bank could potentially draw upon its resources and partners to help increase student access to healthy food (e.g., by establishing a school pantry) since access to healthy foods and children's choice of foods at home may be limited.

Food Bank's mission is "to end hunger by organizing food, information and support for community survival, empowerment and dignity." CookShop, a multilevel intervention, addresses this mission by reaching and impacting the knowledge and individual behaviors of children and their families. By adding or expanding the PSE support it offers to CookShop schools, Food Bank has the potential to continually improve the environment in which staff members and children work and learn and further promote healthy behaviors and lifestyles.