



United States  
Department of  
Agriculture

Food and  
Consumer  
Service

Office of  
Analysis and  
Evaluation

# Team Nutrition In Action:

## Phase I: Case Study Reports on the Pilot Implementation Communities



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## **EXECUTIVE SUMMARY**

The USDA's Team Nutrition (TN) is a school-based program that encourages children to make healthy food choices. Team Nutrition has been adopted by over 15,000 schools throughout the country for implementation in the 1996-97 school year. To evaluate how Team Nutrition is implemented in a field setting and whether it can be successful in changing students' nutrition skills, motivations, and behaviors, USDA initiated the Team Nutrition Pilot Communities Project. Phase I of this project was conducted in seven school districts in the spring of 1996, and Phase II was conducted in the fall.

The evaluation of the pilot program includes a process evaluation to document the extent and nature of the implementation in the seven districts and an outcome evaluation to assess changes among students that result from the program. This case study report presents the results of the Phase I process evaluation. It documents in detail how the program was implemented in the communities, as well as what factors facilitated or impeded implementation, and how teachers, food service staff, and administrators initially reacted to TN materials and activities. Student outcomes and a description of Phase II implementation will be presented in future reports following the analysis of Phase II data.

## **1. WHAT IS THE TEAM NUTRITION PROGRAM?**

Team Nutrition is intended to support the USDA's School Meals Initiative for Healthy Children. It consists of two interrelated initiatives.

**Multifaceted nutrition education** is delivered through the media, in schools, and at home to build skills and motivate children to make healthy food choices. The cornerstone of the nutrition education is a set of classroom modules developed by Scholastic, Inc. for administration at three grade levels (Pre Kindergarten-Kindergarten, 1-2, and 3-5). Each module consists of eight to nine lessons that include activities to involve students, peers, parents, teachers, and cafeteria staff.

**Training and technical assistance** is provided to school food service staff to enable them to provide appealing meals that meet the Dietary Guidelines for Americans. The support includes the dissemination of training standards and training materials, grants to States to develop training programs, and a resource system to enable food service personnel to access education and training programs.

Based on a social marketing approach, Team Nutrition assumes that behavior is influenced by a variety of factors including intrapersonal, interpersonal, institutional, and community variables

as well as public policy. Thus, the program is designed to address all of these factors by attempting to reach children through multiple sources—teachers, peers, parents, food service staff, the media, and the community. The distinguishing elements of the program include the focus on nutrition-related behavior change among students, the interactive nature of the classroom lessons, and the connections made between the classroom lessons and the cafeteria.

## **2. WHAT IS THE TEAM NUTRITION PILOT IMPLEMENTATION PROJECT?**

The Team Nutrition Pilot Implementation Project was designed as an efficacy evaluation conducted in a field setting. It addresses the following questions: can Team Nutrition have a positive impact when implemented as intended? The study also provides an opportunity to systematically describe implementation, which is the focus of this report. USDA implemented the Team Nutrition Pilot Implementation Project in seven school districts—Des Moines, IA; Hamblen County, TN; Tulsa, OK; Vacaville, CA; Lawrence, MA; Passaic, NJ; and Cleveland, OH. With guidance from the USDA, these districts implemented the TN program in 19 local elementary schools.

The pilot implementation called for teaching all of the Scholastic lessons in each of the relevant grades and conducting a set of core activities designed by the individual districts and approved by the USDA. These activities included cafeteria and school events, such as chef visits, and community-wide events such as nutrition fairs, media coverage, and parent food tasting events.

## **3. OVERVIEW OF THE PROCESS EVALUATION STUDY METHODOLOGY**

An intensive process evaluation was planned to obtain a variety of both qualitative and quantitative data at the district, school, and teacher levels. The objectives of the evaluation are to:

- Document the implementation of the TN program in the seven pilot communities.
- Offer meaningful guidance to schools beyond the pilot program that are committed to the principles of Team Nutrition but are at the early stages of implementation.
- Provide an explanatory context for the forthcoming student outcome analyses.

## **CHAPTER 1: NUTRITION: AN OVERVIEW**

## 1.1 BACKGROUND TO TEAM NUTRITION

The USDA School Meals Initiative for Healthy Children is a comprehensive plan to ensure that children have healthy meals at school. A major part of this plan is an update of nutrition standards so that school meals meet the Dietary Guidelines for Americans. Recognizing that simply publishing a regulation is not likely to change children's diets, USDA established Team Nutrition (TN) to ensure that schools are able to implement the plan and that students avail themselves of the healthier meals offered.

The mission of Team Nutrition is ...

*To improve the health and education of children by creating innovative public and private partnerships that promote food choices for a healthful diet through the media, schools, families, and the community.*

Team Nutrition is a nationwide, integrated program that consists of two interrelated initiatives to help implement the School Meals Initiative for Healthy Children. **Multifaceted Nutrition Education** is delivered through the media, in schools, and at home to build skills and motivate children to make food choices for a healthful diet. The program is built around a framework of in-school and mass media efforts, with an emphasis on the school setting to relate to nutrition policy changes in school meals. In-school education is provided by classroom modules designed by Scholastic, Inc. in partnership with the USDA. The materials bring focused, science-based nutrition messages to children in a language that they understand while strengthening social support for healthy food choices among parents, educators, and food service professionals.

**Training and Technical Assistance** is the second thrust of Team Nutrition. The assistance is designed to ensure that school nutrition and food service personnel have the education, motivation, training, and skills necessary to provide healthy meals that appeal to children and meet the Dietary Guidelines for Americans. It will also provide personnel with a clear vision of their roles in the school community and as integral team members of comprehensive school health programs. This training and technical assistance includes the dissemination of training standards and training materials, grants to States to develop training programs, and a resource system to enable instructors and food service personnel to access resources for education and training programs.

Team Nutrition has already been adopted by more than 15,000 local schools throughout the country. These TN schools demonstrate their commitment to meeting the Dietary Guidelines for Americans by distributing TN materials to teachers, children, and parents; by involving school food service, teachers, children, families, and administrators in lively and entertaining nutrition activities; by sharing successful strategies and programs with other schools; and by engaging private and other public partners in the community to support TN activities.

## **1.2 THE TEAM NUTRITION CONCEPT**

The concept for Team Nutrition is grounded in a theoretical framework that provides one explanation of how individuals make health behavior choices—social cognitive theory (SCT) (Bandura 1986). SCT is the theoretical framework most often utilized in research studies focused on changing specific eating behaviors, such as those promoted through Team Nutrition, including: eating less fat; eating more fruits, vegetables, and grains; and eating a variety of foods. It stands in contrast to more knowledge-based approaches to nutrition education wherein changes in knowledge and attitudes are the primary outcomes of interest. As noted by Contento et al. (1995), SCT-based nutrition education programs are developed to address multiple influences on children's behavior, including:

- **Personal factors:** health-related knowledge and beliefs, belief that one can engage in specific behaviors (self-efficacy).
- **Behavioral factors:** current behaviors, intentions to act, existence of incentives and/or reinforcement.
- **Environmental factors:** parental and peer influences and support, cultural norms and expectations, opportunities and barriers to engage in new behaviors, and the availability of adult and peer models.

In their review of nutrition education intervention in school settings, Contento et al. (1995), identified 23 studies that employed an SCT-based theoretical approach. Examples include the Know Your Body Program developed by the American Health Foundation (Walter 1989); multiple school-based interventions developed by the Minnesota Heart Health Program (Perry 1985, 1987, 1988); the Children and Adolescent Trial for Cardiovascular Health (Perry 1990); the Heart Smart Program (Arbeit 1992); and Gimme 5 (Domel 1993) among others. In each of these cases, the investigators paid explicit attention to designing programs that addressed each of the three factors listed above and included numerous program components such as curricula, changes in school lunches, school-wide events, family involvement activities, messages delivered through mass media, and point-of-choice labeling of healthier food choices

in grocery stores and restaurants and increased the time children spent in physical education classes. This latter activity is particularly important as many behaviorally focused nutrition interventions are often incorporated into comprehensive school health education initiatives. CATCH, for instance, targeted delaying the onset of smoking behavior and increasing students' level of physical activity along with nutrition behaviors.

In developing and implementing the TN program, USDA relied on social marketing concepts and methods that have been employed in numerous nutrition education and public health programs (Andreasen 1995; Lefebvre 1988). Social marketing is a planning process that incorporates psychological theories, such as SCT, about how people make behavior choices and then folds that understanding into program development. It has an ecological perspective that assumes behavior is influenced by a variety of factors, including intrapersonal, interpersonal, institutional, and community variables, as well as public policy.

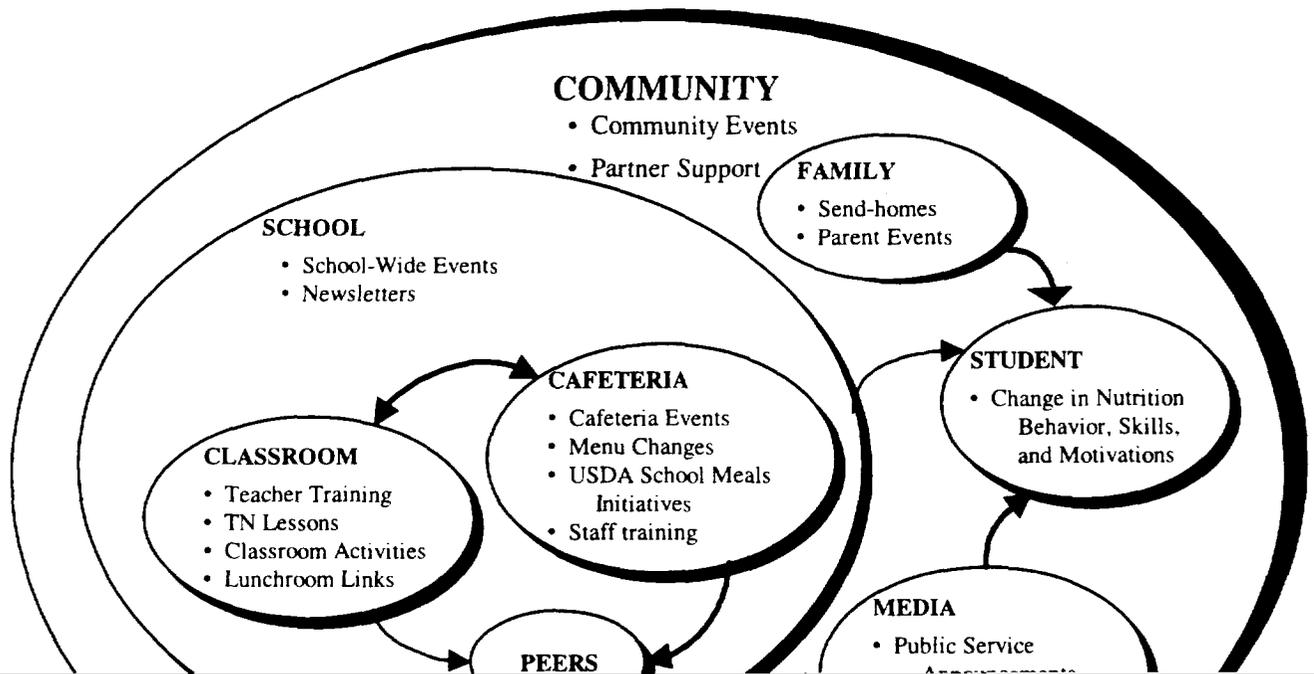
Social marketing is characterized by its focus on creating programs that meet the needs and concerns of specific groups of people—for this pilot project, these are the students, their teachers, food service staff, district food service coordinators, and school administrators. Each of these groups of people have differing needs and concerns relevant to the project. Students want to learn in an active and fun environment and have lunches that taste good; teachers want to learn basic nutrition concepts so they are comfortable teaching the curriculum while also balancing the other curricular demands on their time; food service staff need to learn new preparation methods and also want to be viewed as contributors to the education environment in the school; district food service coordinators have to learn how to implement the various TN school activities while balancing this responsibility with their many other demands; and finally, administrators want to expose their students (and teachers) to new and innovative curricula while also having to conserve and allocate precious resources. In developing the materials for the pilot project, and in planning and implementing the project itself, attention was paid to each of these groups.

The cornerstone of the social marketing approach is the development of a “marketing mix” for each discrete group of people. The four P’s of this marketing mix – product, price, place, and promotion—are described on the next page.

- **Product.** Social marketing “products” are typically behaviors rather than tangible items that characterize commercial marketing practice. The product of Team Nutrition is more nutritious eating behaviors among students. For teachers, coordinators, and administrators, it is implementing the program and participating in the evaluation activities. For food service staff, it is changing the manner in which they plan, order, prepare, and serve school meals.
- **Pricing.** Pricing represents the costs of the product. Social marketing also recognizes that adopting new behaviors, like acquiring new products, has a number of associated “costs”—though not necessarily fiscal ones. TN “prices” include additional curricula, classroom activities, community activities, and food service training, each of which represents an investment of time and resources by the individual teachers, parents, schools, and school districts, including the food service staff and community partners. Programs such as Team Nutrition are structured to provide classroom activities that can be integrated into existing curricula without relinquishing time spent on core subjects. In addition, the supporting training and technical assistance are provided to assist schools and communities in minimizing resource expenditure and maximizing the opportunities to leverage resources through community partner organizations. Additional resources were given to the pilot schools to offset the costs associated with participating in the evaluation.
- **Placement.** Placement involves making the product available to the consumer. How information and materials are distributed and then implemented by TN schools is thus the third area of planning a social marketing program. Previous trials such as CATCH have demonstrated that school-based educational programs involving multiple channels such as classrooms, food service, community, and families can be successful at changing student eating patterns in different areas of the country. The TN materials were distributed to all schools in the pilot project as they will be, albeit in smaller quantities, in the larger TN initiative. The school representatives and teachers then disseminate the messages through the classroom, the cafeteria, and take-home activities.
- **Promotion.** Promotion is required to encourage use of the product as it is placed. Therefore, the final task of planning a social marketing program is developing the communication tools to promote adoption of the program and behavior change. In the pilot project, promotion (or communication) tools included curriculum, school and community-based activities, and PSAs using familiar Disney characters aimed at the children to get them to adopt the behavior. To encourage adoption of the program, teachers attended two training sessions to learn the curriculum and also received lesson plans to aid implementation. Coordinators received orientation materials and had biweekly telephone calls with evaluation staff. School food service staff received the technical assistance materials developed by the USDA and training by the districts, and administrators received orientation materials.

A graphic model of the TN approach to effective nutrition education is provided in Figure 1a.

**FIGURE 1A. TEAM NUTRITION APPROACH TO EFFECTIVE NUTRITION EDUCATION**



it is implemented for the second time.<sup>1</sup> In addition, students who participate in the Phase I pilot will be surveyed again during Phase II to ascertain whether any changes that occurred in Phase I are sustained over time.

The TN Pilot Implementation Project is designed as an efficacy evaluation conducted in a field setting. It addresses the following question: can Team Nutrition have a positive impact when implemented as intended? The study also provides an opportunity to systematically describe implementation, which is the focus of this report. Because it is designed as a model intervention, the pilot project differs from the overall TN effort in several ways:

- The pilot schools received one copy of the Scholastic classroom materials for each teacher participating in the intervention.
- Representatives from each of the pilot communities were oriented to Team Nutrition, the pilot project, and the evaluation during a 2-day planning meeting at USDA.
- Each of the participating school districts was provided with two teacher training sessions (4 hours each) for all implementing teachers. The first session took place just prior to the start of the intervention, while the second was conducted 3 to 4 weeks after the intervention began to incorporate teacher experiences.
- Each district submitted an implementation plan for the pilot and received feedback and technical assistance from USDA in formulation of the plan.
- The coordinators in each of the pilot communities had regular contact with USDA staff, as well as evaluation contractor staff.
- Each pilot community received a stipend to support its involvement in the evaluation of the program. Although none of this money was to be spent on program implementation, it was nonetheless a useful resource for the districts and provided motivation for participation.

While the pilot communities benefited from some support that other TN schools will not receive, they also operated under some constraints by virtue of their participation in the pilot implementation and the accompanying evaluation. These included:

- Limited preparation time due to the need to implement the program shortly after receipt of the Scholastic materials to accommodate implementation and evaluation in the spring semester.

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<sup>1</sup> Although teachers and staff in Phase II will be more experienced with Team Nutrition, students may be at a somewhat different level developmentally because Phase II takes place at the start of the school year.

- Limited time (roughly 8 weeks) to actually teach the Scholastic lessons and conduct the corollary TN activities, again to accommodate the evaluation schedule.
- Constraints on their ability to enlist the media to promote events due to the need to balance publicity against contamination of the comparison schools.
- Time that might have been spent on implementation, which was instead used to support the evaluation effort; teacher, parent, and student surveys; activity logs; cafeteria observations; site visits; etc.

Although somewhat distinguished by the aforementioned supports and constraints, the TN Pilot Implementation Project was conducted in real world settings—not a laboratory environment. The pilot communities faced obstacles in implementing the program that many schools might encounter, including competition for class time from other subjects and preparation for testing, food service contract changes, and a potential teacher strike. Thus, the lessons learned from the pilot should prove valuable to schools around the Nation that opt to become TN schools.

The next section of this report describes the district and school selection for the TN Pilot Implementation Project as well as the requirements for participating districts. Section 1.4 presents the design of the evaluation of the pilot and the various components of that design.

### ***1.3.1 District, School, and Classroom Selection***

In July 1995, the USDA issued announcements through its seven regional offices to recruit school districts to participate in the Pilot Implementation Project. Eligible entities included all public school districts that participate in the National School Lunch Program. The goal of the recruiting was to select at least one school district from each of the seven USDA regions. However, participation in the pilot was completely voluntary.

The applications for becoming a TN pilot community included answers to a set of questions relevant to the district's ability to carry out the project and a resumé for the district's proposed Team Nutrition Coordinator (TNC). Project requirements included district implementation of an intensive form of Team Nutrition and participation in the pilot evaluation. As part of their applications, districts were asked to nominate at least two pairs of elementary schools (one of which would be later randomly assigned to the treatment condition and the other to the comparison condition) and to provide information on a set of variables for each school. They were instructed to make sure each school had a match in the other pair on a number of key variables, including the number of students, the percentage of students eligible for free or reduced-price lunches, the ethnic composition of the school, the extent of existing nutrition

education efforts, and the type of cafeteria service provided (e.g., menu choices available and type of kitchen).

The seven TN pilot districts were chosen competitively from the applications received. The selection criteria included the district's ability to carry out the project, a desire to have a district in each USDA region, and the need to have cost-efficient access to the communities for evaluation purposes. Applications were approved from one district in each of the seven USDA regions.

The seven school districts participating in the pilot are:

- Des Moines, IA.
- Hamblen County, TN.
- Tulsa, OK.
- Vacaville, CA.
- Lawrence, MA.
- Passaic, NJ.
- Cleveland, OH.

The Des Moines and Tulsa school districts each nominated 4 pairs of schools; 4 districts each nominated 2 pairs of schools, and 1 district nominated 3 schools. One-half of the pairs in each district were randomly assigned to the treatment condition. Thus, the Pilot Implementation Project includes 9 pairs of treatment elementary schools plus 1 additional treatment school (a total of 19 schools). The random assignment ensured that each school nominated had an equal chance of being selected as a treatment school.

As described in Section 1.4.2, because of resource constraints, four of the seven school districts (CA, IA, OK, and TN) were selected to participate in an intensive process and outcome evaluation of the TN Pilot Implementation Project. The remaining three (MA, NJ, and OH) are the subject of a more limited process evaluation (basic process) and do not participate in the outcome evaluation. The four districts chosen for the intensive evaluation were selected because they were able to meet the application deadline and demonstrated a strong capacity for both implementation and evaluation.

The seven districts participating in the pilot project selected one grade for implementation of each of the three Scholastic modules. As described below, for evaluation purposes, the four outcome evaluation districts were instructed to implement Module 3 in the fourth grade.

### **1.3.2 Implementation Requirements**

The cornerstone of the TN program is a set of classroom materials developed by Scholastic, Inc. The TN classroom materials consist of three modules, one for each of the following sets of grades:

- Pre-Kindergarten to Kindergarten (Pre-K to K).
- 1-2.
- 3-5.

Although based in the classroom, the Scholastic kits are designed to involve other students in the school as well as the school cafeteria and parents. Each of the kits comprises a set of eight to nine lessons and contains teacher's guides, classroom activities, videos, posters, student magazines, and parent take-home pieces. The lessons include a number of activities that can be integrated into existing curricula and that are designed to involve students in making decisions about nutrition. Each lesson in Modules 2 and 3 also includes an activity that links the lesson to the school cafeteria (Lunchroom Link).

The nine lessons in Module 1 each include several suggested activities that can be related to a subject area such as language, music, science, or social studies. For example, the lesson on how our senses learn about foods includes a science activity in which the kids smell foods while blindfolded and an art activity in which kids plan menus involving foods of a particular color for each day. Modules 2 and 3 are more structured, with a similar structure of activities for each lesson. For example, each lesson includes a Getting Started session, two to three discrete activities, a Lunchroom Link, and other activities. The activities in these lessons are defined in more detail and include such things as having a fruit and vegetable tasting party, setting up an imaginary restaurant and creating menus, and planning and holding a food fair. Appendix A provides a brief description of each of the Scholastic modules and the types of lessons included.

Upon being selected for the TN Pilot Implementation Project, each district was required to submit an implementation plan to the USDA detailing their plans for the program. To facilitate development of these plans, as well as to educate the districts on their role in the evaluation of

the pilot, a 2-day planning meeting was held in Washington, DC, on November 6-7, 1995. The meeting included key personnel from USDA, representatives from the seven selected pilot evaluation communities (including the TNC), Scholastic, Inc., and evaluation contractor staff. It included presentations by each of the seven participating school districts, an overview of the TN components, a description of evaluation activities to be conducted, and instructions to the seven districts on what was required of them during implementation.

As participants in the TN Pilot Implementation Project, each of the seven districts agreed to conduct teacher and food service staff training, teach all lessons in each Scholastic module to all classes in an appropriate grade, and implement a set of core school and community activities, to reflect the TN concept described above. These requirements included the following:

### Teacher Training and Classroom Implementation

- Facilitate participation in training by all teachers involved in teaching any of the lessons from the TN classroom modules. This training was conducted onsite at each district by Prospect Associates and included one session prior to implementation and one session 2 to 4 weeks later. It should be noted that the actual Scholastic modules were not available at the time of the initial training session.
- Implement all eight of the Scholastic lessons for Modules 2 and 3 and at least eight of the nine lessons in Module 1 for the selected grade in all implementing schools in each phase (spring and fall). Because the lessons for Module 1 are less structured and include various numbers of suggested activities, there were no instructions for specific activities beyond the fact that the teachers were to conduct three activities in each lesson. For each lesson in Modules 2 and 3, the teachers were required to conduct, at a minimum, the Getting Started session and each of the activities for the lesson (two or three depending on the lesson). They were also required to complete the Lunchroom Link for at least four of the lessons and to use the parent and student reproducibles and video as directed by the Scholastic module for each of the lessons.

### School and Community Core Activities

- Conduct at least two school-wide cafeteria events in each implementation school in each phase.
- Conduct at least three parent contact activities in each implementation school in each phase.
- Conduct at least two chef activities in each implementation school in each phase.

- Conduct at least one district-wide TN community event in each phase.
- Conduct at least one district-wide media event in each phase.

### School Food Service Staff Training

- Conduct at least 10 hours of food service staff training across the two phases.
- Institute menu changes to make menus consistent with the Dietary Guidelines during the 1996-97 school year.

Plans for conducting the required activities were submitted to the USDA for approval by each of the seven districts prior to implementation. Because some of the core activities might have overlapping audiences (e.g., a chef activity could be a school-wide event with media coverage), each school was required to complete at least five core activities that represented all of the types of core activities presented above. In addition, no single event could be counted toward more than two of the core activities.

By virtue of their participation in the Pilot Project, the seven districts each received the TN Scholastic materials for each class in the grades selected for each of the three modules. In addition, they received in-person training for all implementing teachers (see above), video public service announcements for Team Nutrition, posters and other in-school cafeteria displays, additional TN materials for distribution to parents and children, a certificate and camera-ready logo for use on promotional materials, inclusion of TN pilot communities in USDA's national media efforts, and an evaluation budget to reimburse the communities and schools for expenses incurred by participating in the evaluation.

In addition to the pilot implementation schools, the seven pilot districts were also allowed to nominate additional schools as TN schools. These schools received some of the same program tools but on a more limited scale. These schools committed to the mission and principles of Team Nutrition but they did not commit to any specific set of TN activities. Such schools also did not receive the same amount of materials. Since most of the activity was concentrated in the pilot implementation schools during Phase I, further discussion on the TN schools is more appropriate for future reports.

## **1.4 TEAM NUTRITION PILOT EVALUATION**

The TN pilot evaluation includes the documentation of the initial implementation (Phase I) of Team Nutrition in the pilot communities (process evaluation) presented in this case study report, as well as an assessment of outcomes among students (outcome evaluation).

### ***1.4.1 Team Nutrition Outcome Evaluation***

The outcome evaluation focuses on changes in the nutrition behavior of fourth grade students as well as their skills/knowledge and motivations/attitudes regarding healthy eating. Specifically, it addresses changes among students related to the primary objectives of Team Nutrition:

- Eat more fruits, grains, and vegetables.
- Eat a greater variety of foods.
- Eat less fat.

These changes are assessed separately in Phase I and Phase II of the pilot program through several sources of data collected before and after the pilot implementation in treatment and comparison schools in four of the seven pilot communities. The data sources include:

- Cafeteria observations of fourth grade students.
- Surveys of students.
- Surveys of parents.
- Surveys of teachers.

Preliminary analysis of the Phase I outcome data has been conducted. However, the full analysis of these data will be completed and reported along with the Phase II data after the culmination of the Phase II implementation and data collection.

### ***1.4.2 The Team Nutrition Pilot Process Evaluation***

The primary objectives of the TN process evaluation are to:

- Document the implementation of the TN program in the seven pilot communities.

- Offer meaningful guidance to schools beyond the pilot program that are committed to the principles of Team Nutrition but are at the early stages of implementation.
- Provide an explanatory context for observed outcomes among students.

To meet these objectives, a number of specific research questions have been posed, and data collection efforts have been implemented to answer them. These questions include the following:

#### Description and Comparison of the Team Nutrition Pilot Communities

- What is the makeup of the communities with respect to basic demographic characteristics and initial status of nutrition education?
- How many and what kinds of schools/classes are involved in the pilot implementation?
- What are the attitudes of teachers in the implementation schools toward teaching nutrition prior to Team Nutrition?

#### Description of Team Nutrition Activities in Pilot Communities

- What is the nature of teacher training and teacher evaluations of it?
- How many of the classroom lessons are taught? For what duration? What activities and materials are used?
- What school-based activities are implemented? How well received are they?
- How involved are parents of students in the TN activities?
- What community events are held, and how are they implemented? How well are they received?
- How are community partners, such as chefs, recruited and involved in TN activities?
- How successful are the districts in garnering media attention for TN efforts?
- What food service changes or plans have been made in order to meet the Dietary Guidelines? When are the changes introduced? What type of training is provided to food service staff?

#### Comparison of Approaches to Team Nutrition Across Pilot Sites

- Do the pilot communities differ in the degree to which they implement the requirements of the TN pilot? If so, how?

- In what ways are the pilot communities similar and different in the way they go about implementing Team Nutrition?
- Do the pilot communities differ in the way Team Nutrition is received by teachers, parents, food service staff, etc? Can these differences be ascribed to differences in approaches to implementation?
- What lessons can be shared with other school districts based on the pilot community experience?

**1.4.3 Implementation of the Team Nutrition Pilot Process Evaluation**

As previously stated, four of the districts—Des Moines, Tulsa, Hamblen County, and Vacaville—were selected to participate in the intensive process and outcome evaluation of the pilot project. The remaining three—Lawrence, Passaic, and Cleveland—are participating in a limited process evaluation (basic process). The differences in the intensive and basic process evaluations are described later in this section.

As noted above, the TN pilot is being implemented and evaluated in two phases—once in the spring of 1996 and again in the fall of 1996. Each phase includes a process evaluation designed to answer the research questions just presented.

*1.4.3.1. Selection of Schools*

The districts selected for the pilot and the number of treatment elementary schools in each are displayed in Table 1a.

**Table 1a. Number of Treatment Elementary Pilot Schools in Each District**

School District	Pilot Schools
Des Moines, IA	4
Hamblen County, TN	2
Tulsa, OK	4
Vacaville, CA	2
Lawrence, MA	3
Passaic, NJ	2
Cleveland, OH	2
<b>TOTAL</b>	<b>19</b>

From the matched pairs of schools nominated by each of the 4 districts, 1 pair was randomly assigned to the treatment condition, and 1 pair was assigned to the comparison condition. Thus, for each phase of the pilot, there are 12 treatment and 12 comparison schools in these 4 communities. Of the remaining 3 districts, Passaic and Cleveland include 2 treatment schools each, while Lawrence includes 3 treatment schools. These districts are expected to implement the TN program to the same degree as the other 4 districts, although their participation in the process evaluation is more limited.

As noted above, each district except Massachusetts implemented each of the three Scholastic modules at one grade level. The grades selected by each district and the number of classes in each are displayed in Table 1b below.

**Table 1b. Grades Selected and Number of Classes for TN Implementation by Each District**

	Module					
	Module 1 (PK-K)		Module 2 (Grades 1-2)		Module 3 (Grades 3-5)	
School District	Grade Selected	# of Classes	Grade Selected	# of Classes	Grade Selected	# of Classes
Des Moines, IA	K	10	1	11	4	11
Hamblen County, TN	K	6	1	5	4	6
Tulsa, OK	K	11	2	10	4	11
Vacaville, CA	K	7	2	8	4	9
Lawrence, MA	-	-	-	-	5	7
Passaic, NJ	K	4	1	9	5	8
Cleveland, OH	K	4	1	5	3	6

*1.4.3.2 Intensive Process Evaluation*

The process evaluation was designed to measure the nature and magnitude of the TN effort in the pilot districts. To answer the research questions posed above, a number of data collection efforts were implemented as part of the intensive process evaluation. These included the following for each of the four intensive process communities:

- Planning diaries completed by the district TNCs.

- TN Core Activity Logs filled out by the person responsible for directing each school-based or community activity.
- TN Teacher Activity Logs filled out by all implementing teachers for each Scholastic lesson taught.
- An initial site visit to each district to interview the district TNC as well as the school principal in each implementation school.
- Regular (biweekly) telephone interviews with each district TNC to monitor progress of the implementation.
- One classroom observation of each fourth grade implementing teacher to assess fidelity to the Scholastic lessons.
- A 3-4 day site visit at the end of the intervention, including the following:
  - an extended interview with the district TNC regarding the various components of the intervention and how they were carried out.
  - interviews with selected community partners to assess the nature of their relationships with the school districts.
  - interviews with fourth grade implementing teachers to probe in depth their experiences with Team Nutrition.
  - interviews with cafeteria managers and line workers in each cafeteria to determine their impressions and experiences with Team Nutrition.
  - observations of cafeteria food preparation practices to identify any changes that might affect student food selection and consumption.
- A Community and School Information Form to catalog information on the community and schools.
- District TN implementation plans and quarterly progress reports.

In addition to these instruments designed specifically for the process evaluation, several of the outcome evaluation instruments—the parent, teacher, and student surveys—included several items designed to aid in the process evaluation. Because the outcome evaluation is focused on fourth grade students, the parent and student surveys were conducted exclusively among parents of fourth graders in the four intensive process communities. However, the teacher surveys were conducted among all implementing teachers in each of the seven pilot implementation districts.

The parents of fourth grade students were surveyed by telephone before and after the Phase I TN intervention to assess home nutrition practices, parental attitudes and knowledge, perceptions of children's nutrition habits, awareness of and involvement in TN activities, and reactions to Team Nutrition. Their involvement in TN activities is profiled as part of this case study report.

The teachers implementing Team Nutrition in their classrooms completed self-administered surveys that were conducted in group settings before and after the intervention. The questionnaires assess their nutrition knowledge, attitudes, and behavior, as well as their attitudes toward teaching nutrition. The teacher surveys also provide useful information on teacher involvement in TN activities and perceptions of TN materials, which could also serve to explain differences in the intensity of implementation across the pilot sites.

In addition, the fourth grade students completed surveys in their classrooms before and after the intervention. The teachers were provided instructions and scripts for administering the surveys to the students as a group. The student survey primarily addressed skill-directed nutrition knowledge, motivation, and behavior but also included a few items on recall of TN activities and the Disney PSAs.

#### *1.4.3.3 Basic Process Evaluation*

The three non-outcome districts participated in the basis process evaluation, which included the following:

- Completion of core and teacher activity logs.
- Telephone interviews with district TNCs during the intervention and upon completion.
- Extant data on school and district characteristics as well as project implementation plans and progress reports.
- The above-mentioned surveys of all implementing teachers.

## **1.5 STRUCTURE OF THE CASE STUDY REPORT**

This case study report is designed to provide answers to the research questions outlined above for each of the districts participating in the pilot. In addition, it describes how each district participating in the pilot project attempted to influence students' skill-directed nutrition knowledge, motivation, and behavior through the variety of channels depicted in Figure 1-1

(Section 1.2). Because they were the subject of broader scrutiny, each of the four intensive process evaluation districts is profiled in a separate chapter (Chapters 2-5). The activities in the three basic process districts are described in Chapter 6. Each of these five chapters is organized around the following topics:

- Background information on the school district as a whole.
- Planning for the TN implementation.
- Information on the participating treatment schools.
- Receipt of and reactions to the teacher training.
- Implementation of the classroom-based activities.
- Food service changes and staff training.
- Conduct of school-wide activities.
- Community-wide activities.
- Community partners.
- Media efforts.
- Parent involvement and reactions.
- Lessons learned from the implementation.

In Chapter 7, a synthesis of the findings from across the seven districts is presented, including a summary of the lessons learned. Finally, the technical appendix describes in detail how the process evaluation was conducted.

## **CHAPTER 2: DES MOINES SCHOOL DISTRICT CASE STUDY**

## 2.1 SETTING THE STAGE: DES MOINES AND THE DES MOINES SCHOOL DISTRICT

**Table 2a. Des Moines Public Schools**

<b>Elementary School Population</b>	<b>Number of Elementary Schools</b>	<b>Percent of Elementary School Student Population Composed of Minority Students</b>	<b>Percent of Elementary School Students Receiving Free/Reduced Meals</b>	<b>Existing Nutrition Education Curricula in the District</b>	<b>Food Service Staff Trained in Dietary Guidelines</b>
15,367	44	23.6	47	Yes	Yes

Table 2a contains information on the demographics and status of nutrition education and food service training in the pilot community prior to the introduction of Team Nutrition. Information in this table was drawn from an application submitted to USDA by school districts interested in becoming pilot communities and is useful for understanding the environment into which Team Nutrition was introduced.

Located in the heart of Iowa, Des Moines (population 195,000) is the economic, cultural, and political capital of the State. Although the city's economic past was agrarian based, Des Moines now boasts a number of other industries, including biotechnology, telecommunications, financial services, publishing, and one of the world's largest insurance centers.

The Des Moines school district serves 15,367 students in 44 elementary schools (see Table 2a). Forty-seven percent of the elementary school students have applied for free or reduced-priced school lunches (a proxy for socioeconomic status). Among the elementary school population, 76.4 percent of the students are Caucasian, 14 percent are African American, 4.4 percent are Asian/Pacific Islander, 4.3 percent are Hispanic, and 0.9 percent are Native American.

Prior to the introduction of Team Nutrition, Des Moines' district-wide nutrition education curricula consisted of a 3-4 week unit for fourth graders as part of a Growing Healthy Program and a 4-6 week unit for seventh graders as part of a Family and Consumer Science class in elementary and middle schools, respectively.

District food service staff received training in implementing the Dietary Guidelines during the last 2 years. According to the district's original application, approximately 50 percent of school food service staff also received training in recipes and preparation procedures during an inservice program.

## **2.2. PLANNING FOR TEAM NUTRITION**

### ***2.2.1 Applying for the USDA Team Nutrition Pilot Implementation Project***

The superintendent of schools for the Des Moines Independent Community Schools forwarded information on the USDA TN Pilot Project to the Food and Nutrition Management (FNM) Department. The superintendent suggested that applying for the project would be beneficial to the school district. Both the superintendent and the FNM Department believed that the project was consistent with other district initiatives, that it would provide an opportunity to improve relations between education and food services, that it was something positive for the children, and that it had potential for being implemented on a long-term basis.

Although there were only a few days left until the application deadline, FNM and the superintendent decided to apply. The application briefly addressed the project's proposed structure and established that the project's management team of project coordinators—the director and assistant director of FNM and the supervisor of family and consumer sciences/health—would coordinate curriculum implementation, menu and food service activities, and media relations.

### ***2.2.2 Planning for Project Implementation***

#### *Selecting and Recruiting the Schools*

The project coordinators reviewed the student population data of every elementary school in the district to identify those that most closely matched the overall school population with respect to racial/ethnic distribution and percentage of children applying for free or reduced-priced school meals. Schools representing different geographic areas within the district also were selected.

With the approval of the elementary school directors, the TN project was presented to principals during a meeting in the fall. The criteria for selecting study schools were discussed, and the principals were asked to volunteer. Many of the principals in attendance returned to their schools to discuss the project with their staff and obtain their approval before volunteering. All were supportive of encouraging students to make healthy food choices.

Some of the schools that were initially nominated by the district had to be replaced by schools that matched more closely on certain demographic characteristics. This time-consuming effort

delayed development of the project's final implementation plan. School participation was finalized in early December.

### *Selecting Activities and Building Collaborative Relationships*

Once the schools were selected, the coordinators began the process of developing the implementation plan. This critical process helped them formulate all of the details of the project, make decisions, and develop an organizational structure for the project. Subcommittees and a planning committee were established. The planning process was completed at subcommittee meetings in January.

During the planning process, potential community partners were contacted, including the president of the American Culinary Federation (ACF) and several local organizations and businesses, among them a representative from the USDA extension and a representative from a wholesale food vendor. The chefs were asked to participate in school-based activities, and the businesses and other organizations were asked to participate in the district-wide event. The planning process produced the following activities:

- Displays at Capitol Square—A district-wide activity and media event to be held at Capitol Square in downtown Des Moines involving displays supporting the TN project, including displays developed by project partners and students.
- Chef breakfast—A school-based cafeteria and parent involvement activity.
- Chef snacks—A school-based chef activity.
- Fruits and Vegetables weeks—A school-based cafeteria and parent involvement activity.

### *Developing Relationships With the Schools*

After the schools were selected, a meeting was held with the principals of the TN implementation schools to discuss project details and identify a school contact person who would be responsible for working with the project's management team to coordinate each school's activities.

### 2.3 THE TEAM NUTRITION IMPLEMENTATION SCHOOLS

Table 2b. Team Nutrition Implementation Schools

School	School Population	Percent of Student Population Minority	Percent Receiving Free/Reduced Meals	Type of Kitchen
HOWE	331	10.3	38.5	Satellite
MITCHELL	308	11.0	42.9	Satellite
WILLARD	445	24.5	27.9	Combination
WOODLAWN	460	32.4	59.0	Combination

The four selected implementation schools were Howe, Mitchell, Willard, and Woodlawn. The grades selected for implementation of the Scholastic materials were kindergarten (Module 1); first grade (Module 2); and fourth grade (Module 3). Demographic and food service-related information for each school are provided in Table 2b. As shown, there was a high level of variability between the schools with respect to minority population and the percentage of students receiving free or reduced-priced meals. One of the schools had a notably higher minority population and higher proportion of students receiving free or reduced-priced meals than the other implementation schools.

Two of the elementary schools had all of their lunches prepared at an offsite kitchen (located in either a middle or high school) and delivered. The other elementary schools prepared a portion of their meals on site, with the remainder prepared at a satellite kitchen. Consequently, the elementary school food service directors had little direct involvement in food preparation or training in food preparation.

In interviews conducted prior to project implementation, all of the principals indicated that their participation in the project was voluntary, that it was important for schools to provide nutrition education, and that the current level of nutrition education in their schools was not satisfactory. In general, nutrition programs were covered as part of the health curricula and left to the discretion of the teachers to implement.

One principal decided to serve as the school contact person and believed that her job was to disseminate information in a timely fashion and participate in the school-based core activities. The other principals assigned a teacher as the contact person. In these schools, principals perceived their role primarily as one of "cheerleader," although they did feel it was their responsibility to ensure that calendar conflicts did not impede implementation.

At the time of these interviews, the principals had little knowledge about the pilot project evaluation. Although they knew that an evaluation would be conducted, they were not aware of what would be required of the teachers and students for the evaluation.

## 2.4 TEACHER TRAINING FOR IMPLEMENTING THE SCHOLASTIC MODULES

### 2.4.1 Description of the Des Moines Training

Each teacher training session was held over 2 days in two daily sessions during school hours. The sessions were split because of a lack of substitute teachers to cover for all of the teachers involved in the project at one time. The TNC and the supervisor of family and consumer sciences/health coordinated the training with the principals of the implementation schools. The teachers did not contribute to the scheduling or content of the training.

Almost all of the teachers who were to implement the curricula received training (a total of 36 teachers were trained: 9 kindergarten teachers, 11 first grade teachers, 11 fourth grade teachers, and 5 special resource teachers who covered all of the grades).

### 2.4.2 Teacher Evaluations and Perceptions of the Training

**Table 2c. Teacher Opinions of Training for Implementing the Scholastic Modules**

Percent of Teachers Agreeing That:	%
The training was relevant to teaching the lessons.	100
The training was necessary to teach the lessons.	60
The training improved your ability to teach the lessons.	79
N (number of teachers completing questionnaires)	(30)

As shown in Table 2c, the teachers' opinions of the training generally were positive. All of the teachers felt that the training was relevant to teaching the lessons, and most (79 percent) thought it improved their ability to teach nutrition. However, only 60 percent felt that the training was necessary to teach the lessons. Most of the teachers felt that the second session was more useful than the first because they had already conducted several lessons and therefore had the opportunity to share information with teachers from the other schools about *implementing the Scholastic* lessons. They also pointed out that the curriculum was not available at the first training.

Several teachers indicated that trainers with more classroom experience and a greater understanding of the demands on teachers in the classrooms would improve the training. One of the coordinators suggested that this issue might be resolved if someone from the district could be involved in providing trainers with more sensitivity to the district and to the teachers' workloads.

## 2.5 CLASSROOM IMPLEMENTATION OF THE SCHOLASTIC MODULES

### 2.5.1 Teacher Opinions of Nutrition Education

The teachers in Des Moines were highly motivated to teach nutrition education in their classrooms prior to the implementation of the classroom curriculum. As shown in Table 2d, teachers were almost unanimous in their interest in teaching nutrition, their desire to incorporate nutrition activities into the classroom, and their plans for actually doing so. All believed that teaching nutrition in the classroom is appropriate, and nearly all (96 percent) said their students like nutrition as well as other subjects. Fewer, but still a majority (59 percent) of Iowa teachers, stated that they try to influence the food choices of their students outside the classroom.

**Table 2d. Teacher Motivation Prior to Implementation (Pretest Percentages)**

Motivational Items	%
Percent indicating interest in teaching nutrition	93
Percent indicating interest in incorporating nutrition activities into their classrooms	100
Percent indicating that students like nutrition subjects as well as other subjects	96
Percent indicating that they try to influence the food choices their students make outside school	59
Percent indicating that they plan to incorporate nutrition more often into their classroom activities	89
Percent indicating that the classroom is an appropriate place to teach students about nutrition	100
N (number of teachers completing questionnaires)	(28)

The Des Moines teachers also recognized the benefits of nutrition education. As shown in Table 2e, nearly all agreed that it helps children choose healthier foods, that it complements other subjects they teach, and that good nutrition can affect class performance.

**Table 2e. Percent of Teachers Agreeing With Statements on the Benefits of Nutrition Education (Pretest Percentages)**

Potential benefits of nutrition education	%
Nutrition education in the classroom will help children choose healthier foods to eat.	96
Teaching nutrition will help reinforce other subjects that they teach.	96
Good nutrition can positively affect students' class performances.	96

### **2.5.2 Adherence to Curriculum**

As described in Chapter 1, the Scholastic kits comprise nine lessons for Module 1 (Pre K - K) and eight lessons each for Modules 2 (Grades 1-2) and 3 (Grades 3-5). During teacher training for the pilot, Module 1 teachers were told they should complete at least eight of the nine lessons and that they should conduct three activities per week, with no explicit instructions as to which activities. The teachers for Modules 2 and 3 were instructed to teach all eight lessons, complete the Getting Started session and each of the activities included in the lesson, complete the Lunchroom Link for at least four of the lessons, and use the student and parent reproducibles as directed in the Scholastic lessons. Adherence to the curricula was measured by the number of times the teachers reported completing the recommended lessons, activities, and Lunchroom Links, as well as the degree to which they used the materials as directed. Because there were no explicit activities required for Module 1, the data on activities and materials are not used in measuring adherence for this module.

As shown in Table 2f, most of the teachers in Des Moines reported teaching almost all of the Scholastic lessons. The kindergarten teachers taught, on average, 7.7 of the 8 required lessons, while the first grade teachers and fourth grade teachers taught 7.6 and 7.4 of the 8 lessons in their respective modules. The average duration of the lessons taught was just under 2 hours for each of the three modules, and the cumulative duration of the lessons was 13 hours for kindergarten, 12.5 hours for first grade, and 12.2 hours for the fourth grade.

**Table 2f. Classroom Implementation of Scholastic Module**

	Module 1 (Kindergarten)	Module 2 (Grade 1)	Module 3 (Grade 4)	All Modules
# of Scholastic Lessons (per module)	9	8	8	25
Avg. # of Lessons Taught <sup>1</sup>	7.7	7.6	7.4	7.6
Avg. Duration Per Lesson Taught (Hrs) <sup>2</sup>	1.7	1.8	1.7	1.7
Avg. Planning Time Per Lesson Taught (Hrs) <sup>2</sup>	1.8	1.6	1.2	1.6
Cumulative Duration Per Class (Hrs) <sup>1</sup>	13.0	13.5	12.2	12.9

<sup>1</sup>Averages reflect cumulative totals divided by the number of teachers/sections.

<sup>2</sup>Averages reflect cumulative totals divided by the number of lessons taught in each module.

As shown in Table 2g, the Des Moines teachers report completing most of the recommended activities in the Scholastic lessons. The exceptions are the Getting Started session, which was only conducted for an average of 5.2 of the 8 fourth grade lessons, and the Lunchroom links, which were conducted an average of about 2.5 times by teachers in both grades rather than the required 4 times.

**Table 2g. Average Number of Times Activities Were Conducted Per Class**

Lesson	Module 2 (Grade 1)		Module 3 (Grade 4)	
	Recommended/ Available	Conducted	Recommended/ Available	Conducted
Getting Started	8	6.7	8	5.2
Activity 1	8	7.0	8	7.4
Activity 2	8	7.2	8	7.0
Activity 3	2	1.6	2	1.4
Lunchroom Link	4	2.5	4	2.4
Home Connection	7	3.5	6	2.0
Exercise Connection	0	1.2	1	0.6
Wrap It Up	8	4.3	8	2.1
Taking It Further	8	1.9	8	2.8

Most of the fourth grade teachers indicated that they used their own discretion when deciding which activities to use. Some of the fourth grade teachers taught the activities as prescribed by the training and described in the lesson plans; others went beyond the activities for some of the lessons in which the students were most interested. Scheduling conflicts restricted the number of activities some of the teachers included. Some adapted the activities to the maturity and

intellectual levels of the students. And others said they did not do Lunchroom Link activities because they felt the lunchroom staff was already overburdened and it was unfair to add to their workload. Table 2h indicates that the materials in the Scholastic lessons were used slightly less often than recommended.

**Table 2h. Average Number of Times Materials Were Used Per Class**

Material	Module 2 (Grade 1)		Module 3 (Grade 4)	
	Recommended	Used	Recommended	Used
Parent Information Sheets (reproducibles)	7	5.8	7	4.5
Student Information Sheets (reproducibles)	8	5.0	7	5.9
Student Magazine	2	1.3	6	3.4
Video	4	1.7	5	2.5

The project coordinators listed earlier indicated that implementation was highly successful, despite the time constraints. Along with the teachers, they noted that they looked forward to implementing the curriculum in the future without the time constraints experienced during this implementation. One coordinator indicated that the district FNM’s assistance in coordinating the procurement of food for lessons and activities facilitated classroom implementation.

One of the coordinators noted that the comprehensive approach of classroom lessons supported by school and community-wide promotional events was “extremely effective but it [was] time consuming to get it all into place.” She felt that after the first time, it would be less time consuming, but it would always need someone who is responsible for overall coordination.

Another project coordinator remarked that although communications tended to be challenging, the schools remained positive throughout the project. As one coordinator noted, “Communication between principal, teachers, and food service staff is essential.”

The key challenge in implementing the Scholastic module, apart from the time constraints, was finding resources. Numerous resources (e.g., books, food) were needed to supplement the Scholastic module. Teachers spent additional time shopping for food and copying reproducibles. Concern also was expressed over the volume of reproducibles, which strains available school resources. However, it was noted that with advanced planning, schools would be able to budget for the necessary resources accordingly.

The coordinators indicated that integrating the curriculum with other subjects proved difficult because of the schedule. The health curriculum including nutrition had already been taught in the fall; in the spring, the Scholastic curriculum was actually displacing other curricula. Coordinators indicated that during future implementations, the Scholastic curriculum will be integrated as part of the health curriculum.

The general consensus was that the project, despite the timeframe and the pressure, was “worth it for the kids” and “really fun for them.” One coordinator said that she had heard teachers talk about how students are discussing what they eat and how they need to change their eating behaviors. The hands-on activities were judged to be the most effective, particularly those involving food tasting.

### *Implementation Methods*

Each of the 11 fourth grade teachers taught the entire Scholastic curriculum in his or her self-contained classroom. Most of the teachers presented the curriculum as a separate unit on nutrition because they felt the schedule did not allow for integration. However, the teachers indicated that whenever it was appropriate, they integrated the Scholastic activities into other subjects. Three of the teachers integrated some of the activities with language arts, particularly the daily digest activity. One used part of the sensational foods lesson as a language arts lesson on adjectives. Two teachers integrated some of the activities with science (food chain) and math (graphing). Most of the teachers felt that the curriculum was most appropriate as part of a health curriculum and planned to teach it as part of the health unit in the fall.

### **2.5.3 Teacher Attitudes Toward Scholastic Materials**

Table 2i presents the attitudes of teachers in all three grade levels toward the Scholastic modules. Ninety percent of the teachers in this district were satisfied with the Scholastic materials overall, although there was considerable variation regarding what they liked and did not like about the curriculum. Most of the teachers considered the Scholastic materials appropriate for the developmental (86 percent), educational (86 percent), and cultural (97 percent) backgrounds of their students. Fewer were pleased with the time it took to prepare (52 percent) and teach (55 percent) the lessons. Most thought that the content did provide sufficient background for teaching (86 percent) and that the activities were appropriate for the classroom (83 percent), but fewer felt the activities met their nutrition-related teaching needs (63 percent). Almost all thought that the Scholastic materials made it easy to teach nutrition (93

percent) and that they would teach more nutrition in the future if they were able to use the materials (89 percent). Three-fourths thought the Scholastic materials were better than other nutrition materials they had used.

**Table 2i. Teachers' Attitudes Toward Scholastic Materials**

<b>Teachers Who Reported That They Were Satisfied With Scholastic Materials</b>	<b>90%</b>
<b>Percent of Teachers Who Agree or Strongly Agree That:</b>	
The Scholastic materials were appropriate for the developmental level of the students in my class.	86
The Scholastic materials were appropriate for the educational levels of the students in my class.	86
The Scholastic materials were culturally appropriate for the students in my class.	97
The time required to prepare to teach the Scholastic lessons was reasonable (considering that they were new to me).	52
The time required to teach the Scholastic lessons was reasonable.	55
The content of the Scholastic materials did provide sufficient background for my nutrition-related teaching needs.	86
The classroom activities met my nutrition-related teaching needs.	63
The activities suggested in the Scholastic materials were appropriate for my classroom.	83
Having the Scholastic materials makes it easy to teach about nutrition.	93
I will teach more about good nutrition in the future if I can use the Scholastic materials again.	89
The Scholastic materials are better than other nutrition teaching materials I have used.	76
N (number of teachers completing questionnaires)	(29)

In personal interviews, all of the fourth grade teachers indicated that the Scholastic materials were significantly better than the curriculum they had been using and that they supported the themes of the lessons adequately. They particularly liked the number of hands-on activities and the *Food Works Magazine*. Teachers noted that they often relied on their own teaching experiences and knowledge of their students to supplement the curriculum activities.

One fourth grade teacher was most satisfied with the field trip to the base kitchen where the

school's food is prepared. She said that one student told her, "I love that I know where my

their own), the lesson plans (described as well written and presented), the student and parent reproducibles, and the video (although this was described as “too brief”).

In general, the teachers agreed that the students liked anything that involved tasting foods and analyzing their own diets. One teacher said that the children liked keeping track of what they ate and comparing it with the pyramid. She noted: “The children came right out and said they weren’t eating enough vegetables.”

The teachers were least satisfied with the time it took to prepare and implement the lessons, particularly lessons that required a great deal of xeroxing or assembling food and materials. One teacher felt that “a lot of ideas were good, but it was not realistic to get them all done in the given timeframe.” Teachers also commented that the student worksheets were extraneous and there was a lack of supportive materials such as a poster of the food pyramid and general information on nutrition.

#### ***2.5.4 Changes in Teacher Behaviors***

Three of the fourth grade teachers indicated that their involvement in the project had changed their own behaviors and the way they used food in the classroom. One teacher indicated that she has become more aware of different foods and will be more likely to give healthier birthday treats in class. One teacher noted that she decided to stop giving tootsie pops to her students as rewards. Another teacher reported that she provides low-fat snacks and points out differences and alternatives to candy. This teacher said that she has been eating more fruits, vegetables, and grains since her involvement with Team Nutrition.

#### ***2.5.5 Involvement of Cafeteria Staff***

The cafeteria staff interviewed after project implementation were very positive about the project, despite the fact that they reported it greatly increased their workloads. A frequently cited example was the additional time required to cut up the fresh fruits and vegetables for the tasting activities.

The involvement of food service staff varied across the schools. At the high end of involvement, the food service coordinator at one of the schools not only coordinated all of the school-based activities and ensured that supplies were available and the displays set up, but also gave preschool and fourth grade students a tour of the kitchen at a middle school and let

them design their own menu according to the food pyramid. She promised to prepare that menu for their school as a special treat.

The elementary school food service coordinator talked to children about fruits and vegetables, visited the kindergarten classes, and participated in the chef breakfast, chef snack activity, and fruits and vegetables week. She took classes on nutrition from the district in the spring so she could answer children's questions about the food. She indicated that "the kids are eating a lot more of the fruits and vegetables in the cafeteria sack lunch and not throwing as much food away."

The food service manager at another school indicated that being more involved in the planning process would have made her feel more of a participant. Although she was very involved in preparing food and displays for the school-based activities, she did not conduct any tours. The onsite food service coordinator at this school also indicated that she wanted to be more involved in planning classroom activities and knowing what the children were doing in the classroom. She asked one of the teachers if she could copy some of the curriculum materials so she would know what the children were learning. Although she said she was most involved with the first grade classes, she also helped prepare the sample foods for the fruits and vegetables week.

The elementary school food service coordinators at the other two schools were involved in the school-based activities but not in any classroom-initiated activities. The onsite food service workers at one school said they went into the classroom to bring food but otherwise were not involved. Onsite workers at the other school reported that they gave kitchen tours and discussed the fat content of lunch menus with the children.

## **2.6 IMPLEMENTATION OF SCHOOL-BASED CORE ACTIVITIES**

Figure 2a displays a timeline of the implementation of the school and community-wide activities. All four schools in this district conducted the following school-based activities:

- Chef's breakfast.
- Chef's snack.
- Fruit week.
- Vegetable week.
- Positive parenting workshop.

Overall, the teachers and food service staff were very positive about these events and believed that they successfully conveyed their nutrition messages and engaged the students' interest. The food service staff indicated that the activities involved a great deal of extra work for them, but it was worth it for the students. The teachers liked the school-based activities because they felt that "everyone was working together at the district and building levels." Most teachers felt that the activities improved the relationship between food service staff and school staff.

### **2.6.1 Chef Activities**

The chef breakfast and chef snack activities were conducted by volunteer chefs from the local AFC interested in the TN project because Team Nutrition complements a similar project the AFC is conducting (described later in this case study).

Food service managers were involved with the initial planning of both chef activities and met with chefs to discuss materials and the agenda. The TNC gave a presentation on Team Nutrition and showed the Great Nutrition Adventure video at an AFC meeting. For the chef breakfast, two chefs came to each school and helped prepare and serve breakfast to the students. Although school lunch is the focus of the majority of school food service programs, many schools provide extensive breakfast programs for their students. It was felt that encouraging healthy food activities at breakfast would be covered by the mission of Team Nutrition and provide an opportunity to involve those working parents who might not be able to participate in the lunch programs.

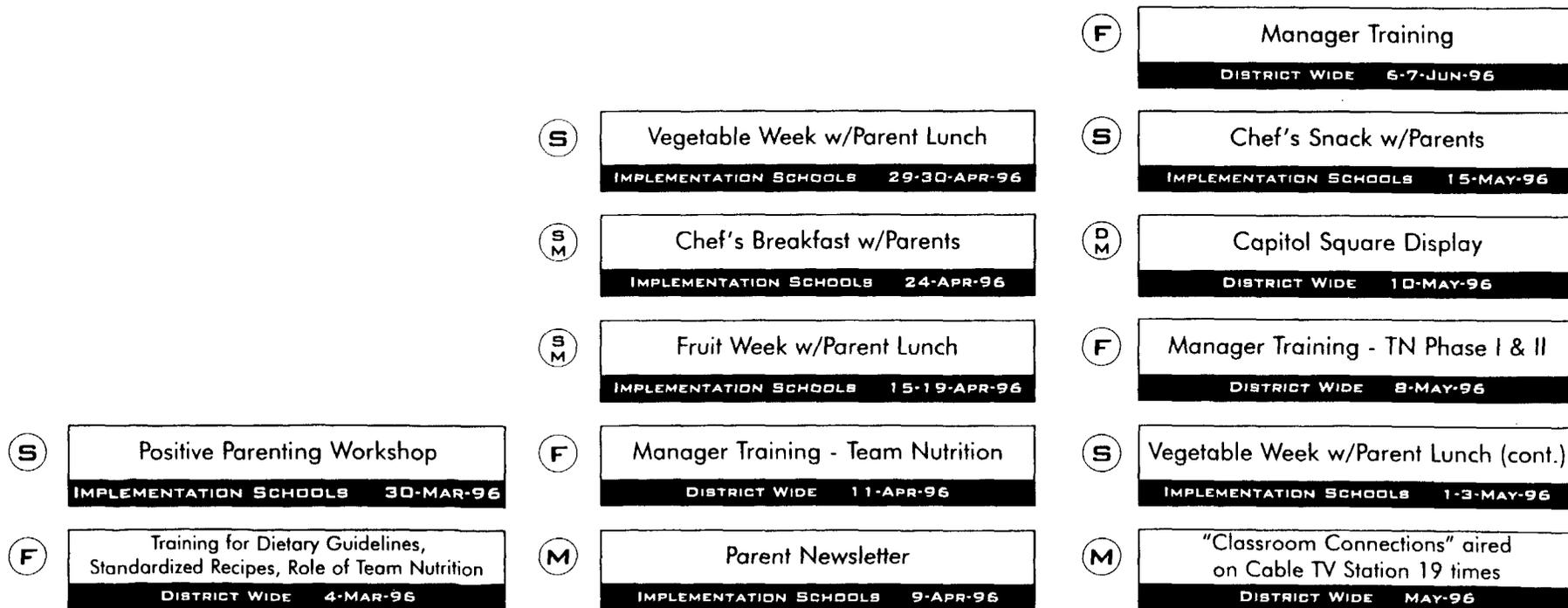
For the chef snack activity, chefs came into the fourth grade classrooms and taught the students about low-fat snacks. The chefs helped prepare a healthy bagel snack served on a Frisbee for all the students. The students then helped serve these snacks to other classes in the school. All of the fourth grade teachers were involved in the chef snacks activity and felt that it was a very positive experience for the children. One teacher felt it was important because "at fourth grade, kids begin to make some food choices and have some money to spend on snacks. This helped them think 'before I buy that candy bar, what are my other choices?'" At one school, the teachers noted that the chef who came to their school was also a teacher, and this really helped in working with the students.

# Figure 2a: Des Moines, Iowa

## Legend

- (S) School Event
- (D) District-Wide Event
- (M) Media Event
- (F) Food Service Training

2-15



**February/March**

**April**

**May/June**

The challenges to implementing these activities included purchasing the food and supplies, communicating with the chefs, and building trust between the chefs and food service staff. As one coordinator noted, it was difficult to ensure that the chefs would meet their commitments during the established timeframes.

The teachers commented that the chef breakfast appeared to have a positive effect on the students who attended. One of the coordinators, however, was not sure whether the breakfast activity was successful in conveying any nutrition messages, although the students did enjoy seeing the chefs.

All food service staff were involved in the chef activities and indicated that they were very successful and that the students enjoyed them.

### ***2.6.2 Fruit and Vegetable Weeks***

Each day of fruit week and vegetable week students sampled a different fresh fruit or vegetable in the school cafeteria. A display consisting of fruits or vegetables and educational materials was set up in the cafeteria. Each day that week, TN classrooms received samples of the featured fruit or vegetable for the students to taste. A produce company helped secure the produce and educational materials.

The teachers and food service staff reacted positively to this activity. Both noted that the students really liked the fruits, especially the kiwi, but that the vegetables received mixed reviews. Some of the teachers thought that serving the vegetables without any dip was the reason many of the children did not like them.

One project coordinator noted that the fruit and vegetable weeks effectively transmitted the intended messages because they were very focused: “The message was exactly what was provided.”

Parents were invited to eat lunch at the school during the fruit and vegetable weeks. Not many parents participated, but feedback from those who did was positive.

### ***2.6.3 Positive Parenting Workshop***

A total of approximately 100 parents and 50 others from various community organizations attended a workshop reinforcing the nutritional goals of Team Nutrition. The workshop discussed with parents the importance of healthy food choices and provided a display of TN

materials and information. Nutritional snacks were also available for the parents to sample. All four implementation schools participated in the event and the TNC was pleased with the outcome.

## **2.7 FOOD SERVICE ACTIVITIES AND CHANGES**

### ***2.7.1 Plans for Meeting Dietary Guidelines***

Project coordinators felt their existing menus were close to meeting the revised Dietary Guidelines. They were planning on using the USDA-recommended nutrient analysis software, Nu Menus, to analyze a subset of menus for the next school year. However, it was a very time- and labor-intensive project. Involvement in Team Nutrition had sped up their timeline for conducting the analysis.

School cafeteria staff who were interviewed were not aware of any menu changes, but they did note that they had been using less butter and salt in cooking prior to TN implementation. One cafeteria manager mentioned that they rinsed ground beef; another mentioned that they had stopped frying anything and started serving more pasta; and a third noted that they had a recipe for making green beans without salt. No other changes were noted regarding menus or general food preparation.

### ***2.7.2 Observations of Food Preparation***

Observers of food preparation indicated that it was highly consistent with recipes (e.g., no extra ingredients were added).

### ***2.7.3 Food Service Staff Training***

Approximately 200 food service workers across the district participated in a district-wide inservice training that addressed the dietary guidelines, standardized recipes, and the role of Team Nutrition. Food service managers received approximately 3 hours of additional TN-related training early in the summer.

During interviews with selected food service personnel in the implementation schools, only one indicated that she had received any training during the spring and that it was more of an information session on Team Nutrition than a training. All food service managers indicated that they expected to participate in a 2-day inservice training the first week of June.

## **2.8 COMMUNITY ACTIVITY**

The community activity doubled as the project's main media event. The project planning committee developed an idea to establish displays by implementation schools, commodity groups, and community and business partners at Capitol Square in downtown Des Moines. The displays supported the themes of Team Nutrition and stressed the importance of eating a wide variety of foods for health. The materials were displayed during the lunch hours and included a food pyramid game developed by the students.

One coordinator thought the event was "excellent" but was disappointed that only about 300-400 people visited the displays. The coordinator attributed the low turnout to the location. Parents, teachers, administrators, and select students participated in the school exhibits and were contestants in the game competition.

Two news broadcasting celebrities participated in the pyramid game with the students during the community event.

## **2.9 COMMUNITY PARTNERS**

As stated in Section 2.2.2, community partners were invited to participate in a planning group (discussed earlier) that was convened in early January. Familiarity with potential partners and development of partnerships was facilitated by the TNC's involvement in a Healthy People 2000 planning group within the community. Involvement in that group provided the TNC with a working knowledge of the organizations and their representatives.

During the advisory group meeting, Team Nutrition was presented and ideas for community and school-wide events were discussed. The TNC went to meetings of local organizations such as the American Culinary Foundation to make presentations on Team Nutrition. This process provided the partners an opportunity to have an active voice in selecting the activities and deciding on the extent of their participation. Overall, partners contributed the following: the ACF organized teams of two chefs to go to the schools for the breakfast and snack events, and vendors assisted in the development of the fruit and vegetable week events and volunteered time and materials to organize the community event.

Interviews conducted with selected community partners, including a chair of the local American Culinary Foundation, two commodity group representatives, and a representative of the USDA Extension office, revealed a high level of enthusiasm for the project and satisfaction with their experience participating in Team Nutrition.

Satisfaction with the experience was facilitated by the professionalism of the management team. All of the community partners commented that the project was extremely well organized and that they had clearly defined roles and responsibilities. This facilitated their involvement and made the experience more enjoyable.

## **2.10 MEDIA EVENTS AND COVERAGE**

There was newspaper and radio coverage of the community event and television coverage of the fruit-tasting activities at one school and the chef's breakfast at another. Team Nutrition also was discussed in a PTA newsletter, a Department of Education newsletter to school employees, and commodity newsletters.

The TNC and supervisor of family and consumer services appeared on "Classroom Connections," a cable TV show on which guests discussed nutrition education and Team Nutrition.

USDA-disseminated Disney PSAs using the characters from "The Lion King" to talk about good nutrition represented another effort to get the TN message out through the media. When surveyed in the classroom, two-thirds of the Des Moines fourth graders recalled seeing the Disney characters Pumba and Timon talk about good nutrition on television (40 percent recalled it many times and 26 percent at least once).

## **2.11 PARENT INVOLVEMENT**

### ***2.11.1 Parent Awareness of Team Nutrition***

Parents of the TN students were potentially involved through the media, through school-wide and community-wide activities, and through take-home materials from the Scholastic modules. The telephone interviews with fourth grade parents assessed the degree of these various types of involvement.

As shown in Table 2j, 40 percent of the parents of the fourth grade students had heard about Team Nutrition through television (29 percent), the newspaper (23 percent), or radio (13 percent). Almost all (90 percent) were aware of either a TN classroom (88 percent), school-wide (56 percent), or community (37 percent) event. Only 19 percent, however, had actually participated in a TN event.

**Table 2j. Parent Awareness of Team Nutrition**

<b>Percent of Fourth Grade Parents Reporting They:</b>	<b>%</b>
Heard of Team Nutrition through any media (Net)	40
Heard of Team Nutrition on the television	29
Heard of Team Nutrition on the radio	13
Heard of Team Nutrition in the newspaper	23
Heard of any TN event (Net)	90
Were aware of a TN community event	37
Were aware of a TN classroom event	88
Were aware of a TN school-wide event (outside of classroom)	56
Participated in a TN activity	19
N (number of parents completing questionnaires)	(181)

**2.11.2 Nutrition Education Activities in the Home**

Seventy-three percent of the parents surveyed reported some type of nutrition activity in the home (Table 2k), such as family nutrition projects (42 percent), other nutrition homework (40 percent), and family reading materials (45 percent).

**Table 2k. Percent of Fourth Grade Parents Reporting Participation in Nutrition Activities in the Home**

<b>Home activities</b>	<b>%</b>
Conducted any home activities	73
Family nutrition projects	42
Other nutrition homework	40
Family reading materials	45
Other activities	20
N (number of parents completing questionnaires)	(181)

Two-thirds of the Des Moines parents said they completed at least one of the eight TN parent information sheets (reproducibles), with an average of three of the sheets completed (Table 2l). Relatively few parents recalled receiving the parent newsletter (12 percent) or seeing the children's magazine (23 percent); only 10 percent said they used these items with their child.

**Table 2i. Parent Use of Take Home Team Nutrition Materials**

Percent completing any of eight parent information sheets (reproducibles)	67%
Mean number of parent information sheets (reproducibles) used	(3.0)
Percent receiving a copy of "Take Out," TN newsletter for parents	12%
Percent whose child received "Foodworks," TN children's magazine	23%
Percent spending time with child using "Take Out" or "Foodworks"	10%
N (number of parents completing questionnaires)	(181)

The parents who used the parent Information Sheets (reproducibles) expressed very positive attitudes toward them (Table 2m). However, just 64 percent said there was enough time to complete them. While few parents remembered the Scholastic parent newsletter, "Foodworks," those who did almost unanimously said it was understandable and provided useful information.

**Table 2m. Parent Opinions of Take Home Team Nutrition Materials**

<b>Percent of Parents Agreeing or Agreeing Strongly That:</b>	<b>%</b>
Parent information sheets (reproducibles) were interesting to child	96
There was enough time to complete parent information sheet (reproducibles) activities	64
The parent information sheets (reproducibles) were important to the child	83
The child had fun doing parent information sheets (reproducibles)	90
Parent was able to understand information sheets (reproducibles)	98
Sheets gave parent other ideas to practice good nutrition	86
<b>Percent of parents who liked all or most of the parent information sheets (reproducibles)</b>	<b>85</b>
N (number of parents completing questionnaires and using parent information sheets [reproducibles])	(119)
<b>Percent of Parents Agreeing or Agreeing Strongly That :</b>	
"Take Out" provided useful information	95
Parent could understand information in "Take Out"	100
N (number of parents completing questionnaires and receiving "Take Out")	(20)

Teachers concurred with the results. In general, the teachers felt that parent involvement was the weakest link. Many activities relied on home support that often was "just not there." For example, children were to bring in recipes from home. But despite giving the children plenty of time, very few of them ever brought in any recipes.

The PTA was involved in planning the community event and contributed ideas about how to inform and involve parents.

## 2.12 LESSONS LEARNED IN DES MOINES

The experience in Des Moines provided useful information for future TN implementations. The following key factors were unique to this district and perceived to be critical to successful implementation and management:

- **Establish a Team Management Style.** Recognizing the amount of effort required, the district established a team approach to task completion early in the project. The three representatives divided responsibilities for coordinating classroom activities, food service activities, outreach, and management. This approach allowed them to provide comprehensive support according to their areas of expertise. Their team-building approach carried through to the planning committee established at the initiation of the project.
- **Utilize Consensus Building.** The management team in this district took a very methodical approach to consensus building and planning. During this phase of implementation, they spent a great deal of time introducing the program to the schools, teachers, the administration, and community partners to generate awareness and obtain “buy-in” from key stakeholders. As a result, they established a rapport with the schools and several community partners that will help them integrate Team Nutrition into their district and ensure its continuance beyond the pilot implementation project. However, more time was needed to involve food service managers in the planning process.
- **Generate Media Coverage.** The management team felt that it was important to capitalize on community partner involvement to assist with the effort to generate media coverage.
- **Recognize Time Constraints.** Sufficient time is needed to establish communication links between teachers and food services. Time also is needed to build working relationships with chefs, media, and business community partners.
- **Add Physical Activity Component.** Recognizing the connection between health, food consumption, and physical activity, the TNC and other project coordinators encouraged other district staff to develop a physical activity component to link to Team Nutrition. It was felt that the physical activity component together with Team Nutrition would provide a well-rounded curriculum.

**CHAPTER 3: HAMBLEN COUNTY/MORRISTOWN SCHOOL DISTRICT  
CASE STUDY**

### 3.1 SETTING THE STAGE: HAMBLEN COUNTY

Table 3a. Hamblen County

Elementary School Population	Number of Elementary Schools	Percent of Elementary School Student Population Composed of Minority Students	Percent of Elementary School Students Receiving Free/Reduced Meals	Existing Nutrition Education Curricula in the District	Food Service Staff Trained in Dietary Guidelines
4,583	12	10	43	No	Yes

Table 3a contains information on the demographics and status of nutrition education and food service training in the pilot community prior to the introduction of Team Nutrition. Information in this table was drawn from an application submitted to USDA by school districts interested in becoming pilot communities and is useful to understanding the environment into which Team Nutrition was introduced.

Situated in a valley surrounded by lakes and mountains, the city of Morristown (population 22,000) in Hamblen County is approximately 40 miles east of Knoxville, Tennessee. There are

10 elementary schools, 4 middle schools, and 2 senior high schools with a total of

These lessons were supplemented by nutrition activities conducted by the School Nutrition Program (SNP) and the Nutrition Advisory Council. Examples of the supplementary activities include:

- Puppet shows on healthy snacks and the Food Guide Pyramid.
- An American School Food Service Association Poster Contest.
- A Heart Fest at the school sponsored by the American Heart Association.
- Annual Nutrition Fairs in the elementary schools.
- An annual Wellness Fest in the middle schools.
- Periodic presentations by the SNP Supervisors in the classrooms.
- Annual inservice training sessions for teachers.

The school lunch program's office for Hamblen County is housed in the school district's central offices, where a staff of three is responsible for coordinating menus, central purchasing, food service training, and the hiring of food service staff. The SNP takes a very active role in nutrition education in the district, has received Nutrition Education and Training (NET) grants for the last 4 years, and has been involved in teaching nutrition education in the classroom for 17 years.

This district was unique among the pilot implementation project communities because of the activity and visibility of the Nutrition Advisory Committee (NAC), a student council nationally sponsored by the American School Food Service Association. The Morristown NAC has at least 20 members from middle and high schools. In addition to conducting nutrition activities in classrooms and the community throughout the school year, the NAC helps in tasting for food service/menu choices.

Food service staff receive inservice training each year, time and funding permitting. The dietary guidelines were the focus of the training for the 3 years prior to implementation of Team Nutrition.

The supervisor of School Nutrition Programs doubled as the Team Nutrition Coordinator (TNC) for the implementation project in Hamblen County schools. Her support team included the superintendent of schools, the supervisor of instruction for grades K-8, extended contract teachers, principals, school contacts, media representatives, and school nutrition managers.

## **3.2 PLANNING FOR TEAM NUTRITION**

### ***3.2.1 Applying for the USDA Team Nutrition Pilot Implementation Project***

When the announcement for the pilot implementation program was disseminated, the State NET coordinator contacted the SNP supervisor and urged her to apply because of her well-known interest in school-based nutrition education and other standing NET grant activities.

To garner the support of the staff and schools, the SNP supervisor discussed the program with the rest of the food service staff and with the superintendent of schools. After gaining initial support to apply for the project, the SNP supervisor contacted the elementary school principals and the elementary school supervisor.

The district's original application stated that the reasons for applying for the project were to train teachers and make nutrition education materials available through the SNP office. At that time, schedules and funding did not permit the TNC to visit classrooms as much as she wanted. It was hoped that the project would enable the district to train and involve the school food service managers in nutrition education activities and present the food service staff as a resource for nutrition education in the schools.

When the program was initiated, neither the district nor treatment school menus had been analyzed for nutrient content using a USDA-approved software program. Lack of staff resources and the time to train staff and run the computer program were cited as the obstacles to completing nutrient analysis.

### ***3.2.2 Planning for Project Implementation***

Initial planning was conducted after the application was submitted. However, after attending the planning meeting in Washington, D.C., the TNC and the elementary school supervisor realized that much work remained to be done in developing the implementation plan and recruiting support for the activities. Though the TNC was primarily responsible for developing the plan (at times, 100 percent of her time was spent developing the implementation plan), she and the elementary school supervisor both felt they needed at least 3 to 6 months prior to start-up to adequately plan for implementation.

### *Selecting and Recruiting the Schools*

Although selection of the schools was driven by the USDA criteria for identifying pairs of schools that were matched on key criteria, the TNC also looked for schools where the principals, teachers, and cafeteria staff were committed, enthusiastic, and flexible. Any school recruitment and selection problems were solved by providing incentives to staff and regular communication between the TNC and the principals. Final selection of schools was completed by the end of November 1995.

### *Selecting Activities and Building Collaborative Relationships*

The following activities were included in the final implementation plan submitted to USDA:

- Nutrition Fairs—one held at each treatment school.
- Breakfast with the Stars—a promotional radio event featuring school breakfast.
- Chefs Go Back to School—a chef event in each school featuring celebrity chefs from TV and local/regional restaurants.
- Five-A-Day Promotion—existing Five Alive teams scheduled to promote the Five-A-Day Program, as well as the goals of Team Nutrition.
- Parent support solicited through participation in all of the activities and parent contacts in newsletters.
- Media coverage of all events supported by an advisory group.

The TNC had experience implementing many of the activities selected for inclusion in the implementation plan such as the nutrition fairs and Breakfast With the Stars. By building on previously existing program events, the TNC felt that she could better use resources and achieve the objectives of the program within the narrow timeframe for implementation.

Other activities, such as the chef events, were developed to fulfill USDA program requirements but also helped the SNP meet a need for outreach within that community. The SNP hoped that the events would teach the food service staff to season food differently and develop practices to help reduce fat.

### *Developing Relationships With the Schools*

Communication with proposed treatment schools was initiated prior to the final selection of schools and development of the implementation plan. After final selection, the TNC met with

the principals, teachers, and food service staff in the schools to review program goals and the expectations for their involvement. During a series of meetings with the school representatives, school contacts were selected, and teachers and principals were offered the opportunity to participate in the decision-making process for selecting activities and scheduling teacher training.

### 3.3 THE TEAM NUTRITION IMPLEMENTATION SCHOOLS

**Table 3b. Team Nutrition Implementation Schools**

School	School Population	Percent of Student Population Minority	Percent Receiving Free/Reduced Meals	Type of Kitchen
Russellville	498	<1	39	Production
John Hay	271	4	37	Production

Selected characteristics on each of the treatment schools are provided in Table 3b. In addition to being similar in student makeup and structure, the schools were located within a short distance of each other.

The implementation school principals were interviewed during an initial site visit just prior to the start of implementation. Each of them reported feeling involved in the decision-making process. Once they agreed to participate, they discussed the program with their staff. Both of the principals were very satisfied with the school food lunch program and felt that they received good support from the food service central office.

One of the principals was very impressed that students could take as much of the lunch items as they wanted, but desired to see the school breakfast program improved by lowering the fat content. This principal's active involvement in the food service program has resulted in the addition of a salad bar and an apple juice-based slushie machine from which the children can get an afternoon snack.

The principals did not question the importance of teaching nutrition but felt that the curriculum was constrained to what the teachers must teach to prepare their students for the Tennessee standard aptitude test. They felt that expectations about what a school must teach students within a limited timeframe should be realistic.

The principals hoped that nutrition education in the classroom would help students make better food choices but felt that there were no guarantees. When interviewed, one of the principals had not seen the TN module and felt he could not comment thoughtfully on it. However, he felt that nutrition education would assist students in making better food choices “similar to the relative success achieved with smoking and drugs.”

In both of the treatment schools, coordination for the project activities rested with a fourth grade teacher who served as the school contact. The teachers, selected for their enthusiasm and organizational skills, were to serve as liaisons between the district, school food service, and other teachers. The principals viewed their role as that of a “supporter” serving to keep spirits high, handle problems, coordinate with the district office, and respond to any parent questions.

The structure of food service in both of the treatment schools was similar. Each school had an onsite kitchen with menus provided by the district office. Salad bars have been introduced to some of the schools within the past few years, including one of the two treatment schools. Students are encouraged to take an entree and a salad and to finish what they select.

One school maintains a separate cafeteria area, but in the other, students eat in the classroom. Nutritional posters and bulletin boards describing the food guide pyramid are displayed in the cafeterias and classrooms.

The principals had little knowledge about the evaluation or what would be required of their schools for the evaluation. Additional information about the evaluation was provided to the principals during the initial project interviews.

### **3.4 TEACHER TRAINING FOR IMPLEMENTING THE SCHOLASTIC MODULES**

#### ***3.4.1 Description of the Hamblen County Training***

All of the teachers scheduled to implement the curricula participated in the training: six kindergarten teachers, five first grade teachers, and six fourth grade teachers.

Because the training sessions were scheduled after the regular class day and took longer than anticipated, the main challenge was to keep the participants engaged. Although the teachers chose to schedule the training after the school day (to save the money that would have gone to pay for substitute teachers), it was difficult to keep them from fading during the final hour of each of the training sessions. The scheduled start time of the first session was delayed

each of the training sessions. The scheduled start time of the first session was delayed because it conflicted with several teachers' responsibilities to provide after-school supervision of students boarding buses.

### 3.4.2 *Teacher Evaluations and Perceptions of the Trainings*

**Table 3c. Teacher Opinions of Training for Implementing the Scholastic Modules**

<b>Percent of Teachers Agreeing That:</b>	<b>%</b>
The training was relevant to teaching the lessons.	88
The training was necessary to teach the lessons.	47
The training improved your ability to teach the lessons.	44
N (number of teachers completing questionnaires)	(17)

Although teachers at all grade levels felt the training was relevant to teaching the lessons, less than one-half thought the training was necessary to teach the lessons or that it improved their ability to teach the lessons (Table 3c).

In interviews, teachers revealed that some of the negative views of the training were based on reactions to the scheduling. In general, teachers felt that the length of the training was excessive and the timing inconvenient. The teachers agreed that:

- The training provided the necessary tools to teach the TN module.
- The training provided sufficient opportunities to ask questions, give input, and share experiences.
- The training materials were clear and supported the objectives of the program.

The teachers found the opportunities to get input and share ideas with other teachers the most useful aspect of the training; however, they were frustrated with the length of the training session and by not being able to review the training and Scholastic modules in advance of the sessions.

the classroom is an appropriate place to teach nutrition and that students like it as much as any other subject. Fewer teachers (69 percent) were less willing to say that they try to influence children’s food choices outside the school. As shown in Table 3e, the teachers were also in near complete agreement in their recognition of the benefits of nutrition education.

**Table 3d. Teacher Motivation Prior to Implementation (Pretest Percentages)**

<b>Motivational Items</b>	<b>%</b>
Percent indicating interest in teaching nutrition	100
Percent indicating interest in incorporating nutrition activities into their classrooms	100
Percent indicating that students like nutrition subjects as well as other subjects	100
Percent indicating that they try to influence the food choices their students make outside of school	69
Percent indicating that they plan to incorporate nutrition more often into their classroom activities	100
Percent indicating that the classroom is an appropriate place to teach students about nutrition	94
N (number of teachers completing questionnaires)	(17)

**Table 3e. Percent of Teachers Agreeing With Statements Regarding the Benefits of Nutrition Education (Pretest Percentages)**

<b>Potential Benefits of Nutrition Education</b>	<b>%</b>
Nutrition education in the classroom will help children choose healthier foods to eat.	94
Teaching nutrition will help reinforce other subjects that they teach.	94
Good nutrition can positively affect students’ class performances.	100

### **3.5.2 Adherence to Curriculum**

As described in Chapter 1, the Scholastic kits are composed of nine lessons for Module 1 (Pre K - K) and 8 lessons each for Modules 2 (Grades 1-2) and 3 (Grades 3-5). During teacher training for the pilot, Module 1 teachers were told they should complete at least eight of the nine lessons and that they should conduct three activities per week, with no explicit instructions as to which activities. The teachers for Modules 2 and 3 were instructed to teach all eight lessons, complete the Getting Started session and each of the activities included in the lesson, complete the Lunchroom Link for at least four of the lessons, and use the student and parent reproducibles as directed in the Scholastic lessons. Adherence to the curricula was measured

by the number of times the teachers reported (through activity logs) completing the recommended lessons, activities, and Lunchroom Links, as well as the degree to which they used the materials as directed. Because there were no explicit activities required for Module 1, the data on activities and materials are not used in measuring adherence for this module.

**Table 3f. Classroom Implementation of Scholastic Module**

	<b>Module 1 (Kindergarten)</b>	<b>Module 2 (Grade 1)</b>	<b>Module 3 (Grade 4)</b>	<b>All Modules</b>
# of Scholastic Lessons (Per module)	9	8	8	25
Avg. # of Lessons Taught <sup>1</sup>	7.8	7	8	7.65
Avg. Duration Per Lesson Taught (Hrs) <sup>2</sup>	1.37	2.39	4.19	2.69
Avg. Planning Time Per Lesson Taught (Hrs) <sup>2</sup>	0.73	1.48	1.88	1.36
Cumulative Duration Per Class (Hrs) <sup>1</sup>	10.73	16.73	33.52	20.53

<sup>1</sup> Averages reflect cumulative totals divided by the number of teachers/sections.

<sup>2</sup> Averages reflect cumulative totals divided by the number of lessons taught in each module.

As shown in Table 3f, the teachers in Hamblen County completed almost all of the lessons in the three modules. The kindergarten teachers reported completing an average of 7.8 of the required 8 lessons in Module 1, while the first grade teachers presented, on average, 7 of the 8 lessons in Module 2. The fourth grade teachers were in full compliance, with each teacher completing all 8 of the lessons. The average duration of the lessons taught was 1.37 hours for the kindergarten lessons, 2.39 for the first graders, and over 4 hours for the fourth grade students. The average cumulative exposure per class was almost 11 hours for Module 1, just under 17 hours for Module 2, and over 33 hours for Module 3.

Teachers in Hamblen County displayed a high level of adherence to the curriculum (Table 3g). This is particularly true of the fourth grade teachers, who conducted almost all of the required activities. The teachers were somewhat less faithful in their use of the materials (Table 3h) but still used them the majority of the time as recommended.

**Table 3g. Average Number of Times Activities Were Conducted Per Class**

Lesson	Module 2 (Grade 1)		Module 3 (Grade 4)	
	Recommended/ Available	Conducted	Recommended/ Available	Conducted
Getting Started	8	5.8	8	7.8
Activity 1	8	6.6	8	7.6
Activity 2	8	5.8	8	7.5
Activity 3	2	1.4	2	1.8
Lunchroom Link	4	2.8	4	4.3
Home Connection	7	4.4	6	4.3
Exercise Connection	0	0.0	1	0.2
Wrap It Up	8	4.0	8	5.2
Taking It Further	8	2.4	8	2.2

**Table 3h. Average Number of Times Materials Were Used Per Class**

Material	Module 2 (Grade 1)		Module 3 (Grade 4)	
	Recommended	Used	Recommended	Used
Parent Information Sheets (reproducibles)	7	5.6	7	5.8
Student Information Sheets (reproducibles)	8	4.6	7	6.3
Student Magazine	2	0.8	6	4.0
Video	4	2.2	5	3.2

Overall, the coordinators of the TN effort at the district level felt that the two schools did an “outstanding” job implementing classroom and school-wide activities. According to the TNC, the teachers could be counted on to follow through completely on all aspects of the project. Noteworthy were the fourth grade teachers, who spent an average of over 4 hours per lesson and taught all eight of the lessons in the module, resulting in a cumulative duration per class of over 33 hours. The order of the lessons presented was modified slightly to coincide with a school-wide activity being conducted at the schools.

The supervisor of the elementary school programs viewed the informal networking and sharing between teachers as facilitating factors in the completion of the lessons. As she commented, there was no need to “reinvent the wheel.”

The TNC’s assistance in obtaining materials for the lessons and distributing the materials to the teachers relieved some of the burden from the teachers and enabled them to focus on lesson implementation. The TNC commented that some of the materials required for the lessons were difficult to find. She had to make many calls to local vendors and farm stores to find mung beans for a plant-growing activity in the fourth grade module.

One of the challenges for the TNC was facilitating communication between the teachers, administrators, and food service staff. The principals’ cooperation with the TNC contributed to a smooth implementation. The TNC also felt that having really good teachers played an essential part in communicating the nutrition messages to the students. However, the TNC would advise other schools to plan ahead and work closely with teachers and food service staff if they are considering implementing the TN modules.

#### *Implementation Methods*

The implementation method was consistent in the two treatment schools. The teachers collaborated on approaches to lessons and activities and shared ideas and materials but taught the curriculum to their own classes.

The teachers presented the Scholastic materials as a separate health or nutrition curriculum. Some of the teachers selected and modified activities based on how appropriate they felt the activities were for the educational levels and personalities of their students. For instance, one teacher said that an activity was a “disaster” with her class because it required students to interact as a large group; however, it would not be a problem with a different set of students.

The independent evaluators who observed selected lessons and activities reported a consistent and high degree of adherence to the lesson plan among fourth grade teachers.

The teachers also displayed a great deal of enthusiasm for the lessons and seemed comfortable with the curriculum content. Their ease was reflected in the observers’ written comments on the classrooms:

- “Good participation. Students demonstrated mastery of the food pyramid knowledge.”

- “Students seem very interested and seem to understand the concepts very well!”
- “Good open discussion and comments from students.”
- “Students were attentive and had some very good questions. They really know the pyramid!”

### 3.5.3 Teacher Attitudes Toward Scholastic Materials

The Hamblen County teachers also expressed very positive opinions of the Scholastic materials, with 88 percent saying they were somewhat or very satisfied with them (Table 3i). Almost all of the teachers said the materials were developmentally (88 percent), educationally (88 percent), and culturally (100 percent) appropriate for their students. The teachers were less positive about the time required to prepare (65 percent) and teach (53 percent) the lessons. Most agreed that the classroom activities were appropriate for their classroom (76 percent) and met their nutrition-related teaching needs (82 percent), and 59 percent said the content of the materials did provide sufficient background for their teaching needs. Eighty-two percent of the teachers said the Scholastic materials make it easy to teach about nutrition, and 94 percent said the materials would make them teach more about nutrition in the future. Most (82 percent) said the Scholastic materials were better than other nutrition teaching materials they had used.

**Table 3i. Teacher Attitudes Toward Scholastic Materials**

<b>Teachers Who Reported That They Were Satisfied With Scholastic Materials</b>	<b>88%</b>
<b>% of Teachers Who Agree or Strongly Agree That:</b>	
The Scholastic materials were appropriate for the developmental level of the students in my class.	88
The Scholastic materials were appropriate for the educational levels of the students in my class.	88
The Scholastic materials were culturally appropriate for the students in my class.	100
The time required to prepare to teach the Scholastic lessons was reasonable (considering that they were new to me).	65
The time required to teach the Scholastic lessons was reasonable.	53
The content of the Scholastic materials did provide sufficient background for my nutrition-related teaching needs.	59
The classroom activities met my nutrition-related teaching needs.	82
The activities suggested in the Scholastic materials were appropriate for my classroom.	76
Having the Scholastic materials makes it easy to teach about nutrition.	82
I will teach more about good nutrition in the future if I can use the Scholastic materials again.	94
The Scholastic materials are better than other nutrition teaching materials I have used.	82
N (number of teachers completing questionnaires)	(17)

In interviews, the fourth grade teachers reported that the lessons took far longer than anticipated, at least 7 to 8 hours per week, but admitted that this was common for a new curriculum. They anticipated spending less time planning and implementing the lessons in the future. Teachers in one of the treatment schools spent a considerable amount of planning time developing evaluation worksheets for the students. Because the Scholastic curriculum was presented as a separate unit rather than integrated into the curriculum, the teachers felt they needed to develop criteria to judge the students' retention of the messages and justify the time spent on the subject.

Although they felt that the materials had very good content and engaged the students' interest, they found some of the activities overwhelming and would have preferred to be able to "pick and choose" which activities they conducted. It was clear that the teachers' overall satisfaction with the materials was affected by the amount of time needed to prepare and implement the lessons. The teachers commented that they found the program "stressful" and felt "pressured" and would enjoy the materials more if they were able to spread the materials out over a longer period of time.

The teachers felt that the lessons were appropriate to the age and developmental level of fourth graders and could easily work in grades 3 or 5 with minor exceptions. They felt the students gained the most from interactive lessons that required them to interpret food labels and taste new foods and gained the least from lessons that required them to have a long attention span or advanced writing skills.

#### ***3.5.4 Changes in Teacher Behaviors***

Two of the six fourth grade teachers interviewed reported that the TN project changed the way

### **3.5.5. *Involvement of Cafeteria Staff in Classroom Activities***

Food service staff varied, both within and between schools, in their reported involvement in the implementation. Responses varied from very involved to minimally involved. However, the nature of their involvement was consistent; in both of the schools, the food service staff helped prepare food for the nutrition fairs, chef events, cafeteria tours, and classroom taste tests. Though the food service staff's perceptions of their involvement in the activities differed, the teachers consistently recognized their contributions. As one fourth grade teacher stated, "The cafeteria ladies were great!"

Food service staff noticed that the students were eating more fresh fruits and vegetables and trying new things. These changes were consistently attributed to the classroom lessons. As one staff member noted:

"They are eating more fruits and vegetables. Before, they came through the line and just wanted a sandwich and fries, but since the training in the classroom, they are a lot more educated about what their body needs and are eating a lot more vegetables."

Food service staff in one of the schools noticed more significant changes in the lower grade levels.

The food service staff cited the amount of time and the additional workload as problems in implementation. However, when asked if they would recommend this project to other school districts, staff members still responded positively.

- "Yes. Because it is important to get everybody involved. That is what makes it successful."
- "Yes. Because it is for the kids. They will be healthier adults."

## **3.6 IMPLEMENTATION OF SCHOOL-BASED CORE ACTIVITIES**

A timeline depicting the schedule of events is provided in Figure 3a. The core activities in this district were conducted at the two treatment schools. Each of the three activities was designed to attract media attention and enlist community participation. Therefore, we cannot draw large distinctions between the district and school-wide activities that the USDA directed the communities to conduct. This section briefly describes the community/school-wide activities used in Hamblen County to reinforce and support the nutrition education messages of the classroom lessons.

# Figure 3a: Hamblen County, Tennessee

## Legend

- (S)** School Event
- (D)** District-Wide Event
- (M)** Media Event
- (F)** Food Service Training

3-15

**(S)** Chef Demonstration w/Parents  
Walter Lambert  
RUSSELLVILLE 22-MAR-96

**(M)** Breakfast with the Stars  
IMPLEMENTATION SCHOOLS 21-22-MAR-96

**(S)** Chef Demonstration in Knoxville  
Walter Lambert  
IMPLEMENTATION SCHOOLS 29-APR-96

**(S)** Nutrition Fair w/Parents  
JOHN HAY 12-APR-96

**(F)** Chef Demonstration - Mahon Fritts  
DISTRICT WIDE 11-APR-96

**(S)** Cowboy Dan  
IMPLEMENTATION SCHOOLS 3-APR-96

**(F)** Healthy Edge Training  
DISTRICT WIDE 30-31-MAY-96

**(S)** Skit on Food Guide Pyramid to PTA  
RUSSELLVILLE 22-MAY-96

**(S)** Nutrition Fair w/Parents  
RUSSELLVILLE 3-MAY-96

**(F)** Chef Demonstration - David Coburn  
RUSSELLVILLE 2-MAY-96

**(S)** Chef Demonstration - David Coburn  
RUSSELLVILLE 2-MAY-96

**February/March**

**April**

**May/June**

The school and community activities conducted at the two implementation schools were:

- Chefs Go Back to School.
- Breakfast With the Stars.
- Nutrition Fairs.
- Cowboy Dan Presentation.

The overall goals of the cafeteria activities (including the chef and breakfast event) were to help the students make sound nutritional choices that would last them for a lifetime and to make the School Nutrition Program an integral part of the total educational process.

### ***3.6.1 Chefs Go Back to School***

#### *Chef Walter*

On March 22, 1996, Chef Walter Lambert of the University of Tennessee taped a segment of his "Noonday" news show at one of the schools. With the assistance of two preselected fourth grade students from the audience, Chef Lambert prepared a fruit salad that included vegetables in the ingredients. The show aired on April 1, 1996, on the local CBS affiliate.

The chef enjoyed the experience so much that he invited students from the two schools to Knoxville to demonstrate a low-fat recipe with him on the air. Students practiced baking low-fat brownies with applesauce and then brought the TN project recipe to Chef Walter to share with this viewing audience. The television station reported that the recipe was one of the most requested they had ever had on the program.

#### *Chef Coburn*

On May 2, 1996, Chef David Coburn, the Executive Chef of Dollywood, demonstrated for the students at one of the schools how to use food as decorations and garnishes. During the course of his presentation, the chef discussed the importance of eating a variety of foods.

After the student presentation, Chef Coburn demonstrated for the school food service employees of two local school systems how to use seasonings for vegetables and meats. This presentation was not as well received as other activities directed at the food service employees because they felt it was uninformative.

### **3.6.2 Breakfast With the Stars**

Breakfast With the Stars events were designed to emphasize the importance of breakfast and the relationship between sports and nutrition while providing the students with good role models. Lower fat breakfast options, such as bagels and pancakes with fruit toppings, were served. Local high school baseball, softball, and soccer players, as well as the superintendent and the assistant superintendent of schools, were invited to have breakfast with the elementary school students and their parents. In addition, local celebrity disc jockeys broadcasted live from the school cafeterias. The “stars” ate breakfast with the students and signed autographs during and after breakfast.

The events successfully engaged student interest, increased participation at school breakfast (on that day) and secured parent participation. Approximately 55 parents participated in each event. The TNC reported that it was also successful in demonstrating that high school students can act as role models for elementary school students. As one student commented, “I did not realize that these elementary students look up to us and consider us stars.”

In contrast, the teachers and food service staff commented that although the students enjoyed this activity a great deal, they felt it was more promotional than educational. It was frequently cited in interviews as the event least supportive of the themes of the lessons.

### **3.6.3 Nutrition Fairs**

The purpose of the nutrition fairs was to bring the community into the school setting by inviting the parents and community to participate in the promotion of nutrition education.

The theme of the nutrition fairs centered on the Dietary Guidelines and the Food Guide Pyramid. Approximately 950 students, teachers, parents, food service workers, school administrators, and community partners attended the nutrition fairs.

An additional feature was the balloon launch that followed the nutrition fair at one of the schools. Balloon tags featured TN messages and the following instructions: “If found, please return to the nearest school cafeteria. Please write or call the student mentioned above and tell us about your school. Have a Great School Lunch!” One of the students received a call from a student in North Carolina who picked up a balloon.

### **3.6.4 Cowboy Dan Presentation**

Each of the implementation schools had the opportunity to have Cowboy Dan, a singing cowboy, come to visit their school. Cowboy Dan presents a 30-minute show on nutrition and the food guide pyramid. The presentations were supported by a community partner.

### **3.6.5 Additional School-Wide Activities**

Early in the planning phase, the supervisor of elementary schools suggested that the TNC use “extended contract” teachers as additional support for completing activities. To receive an extended contract, teachers negotiate additional teaching or training responsibilities through the district. Two of the fourth grade teachers at one school received extended contracts during the spring semester. Eventually, the TNC would like to have the extended contract teachers train the comparison school teachers in using the Scholastic module, but during this implementation, the teachers conducted additional classroom activities such as developing a skit based on the Food Guide Pyramid, “The Keys to Good Nutrition Land.” Written and produced by one of the fourth grade teachers, the play was presented at a PTA meeting and an all-school assembly. The skit was so well received that the students performed it for a neighboring district later in the year.

## **3.7 FOOD SERVICE ACTIVITIES AND CHANGES**

### **3.7.1 Plans for Meeting Dietary Guidelines**

When asked to comment on cafeteria changes initiated in the district since the release of the new dietary guidelines, food service staff could not identify any specific menu changes. Instead, respondents focused on the notable changes in food preparation practices that have occurred since June 1993. To lower the fat content of the foods, food service staff have been adding less oil, using margarine instead of butter, boiling the meat in water to drain the fat, and doing more baking. Low-fat mayonnaise is used in the tuna salad for the salad bar, and they have been serving more fresh vegetables. Staff consistently encourage students to try a wider variety of fruits and vegetables. Sometimes their encouragement meets with positive results. One staff member commented:

“You know how the kids are. The first thing they do is say ‘EEEW!’ Then we say, ‘It’s good. Try it. You might like it.’ We give them a little sample and a lot of times they will come back for more.”

### **3.7.2 Observations of Food Preparation**

The findings accumulated from observing food preparation support the responses of the food service staff. Observers noted frequent examples of low-fat practices for handling ground beef, steaming vegetables, baking instead of frying, and featuring fresh fruits and vegetables as part of the meals.

### **3.7.3 Food Service Staff Training**

According to the implementation plan, formal training for food service staff was scheduled to occur after the end of the school year. At that time, approximately 120 food service employees, including staff of the treatment schools, will receive Healthy E.D.G.E. training that focuses on changes to the Dietary Guidelines and the new USDA recipes. Additional training on the food-based menu planning system will take place prior to the start of the next school year.

#### *Chef Fritts*

Although not a formal food service training, on April 11, 1996, Chef Fritts, head chef at a local fine-dining restaurant, visited a local high school and assisted the staff in preparing the new USDA recipe for chicken stir-fry. The TNC reported that staff enjoyed working with Chef Fritts and got a lot out of the presentation. One of the staff was encouraged to start her own herb garden.

## **3.8 COMMUNITY ACTIVITY**

In this district, community activities were closely linked to the school-wide activities. Descriptions of these activities are included in Section 3.6

## **3.9 COMMUNITY PARTNERS**

An active member of the community for a number of years, the TNC had a previously established network of community partners from which she drew support for TN activities. An example of the support and community rapport the TNC had developed is demonstrated by her appointment to the board of the local American Heart Association affiliate.

These preexisting relationships allowed the TNC to develop a comprehensive initial implementation plan. The TNC did not have to spend time during the implementation period conducting outreach activities. Instead, a majority of the community partners involved had

familiar, clearly defined roles and responsibilities. They participated actively in the nutrition fairs at the schools by setting up education booths. In other examples, a local food store chain provided a booth on unusual fruits and vegetables, the Health Department provided a booth centered on the 5 A Day fruit and vegetable campaign, and a local hospital provided high blood pressure screenings and information on healthy eating.

Other contributions to the fairs came from the local American Heart Association, the University of Tennessee Extension Agents, the Farm Bureau Women's Group, the 4-H, The Washington Apple Commission, and Carson-Newman College.

New relationships were developed with local chefs. The TNC commented that these were challenging relationships to develop. Although very interested in participating, coordinating activities with their work schedules took a great deal of effort. She suggested that other schools interested in working with chefs be conscious of work schedules and make contingency plans in advance.

Because of scheduling difficulties, interviewers were able to meet with only one of the community partners in this district; therefore, limited information on participant satisfaction is available.

### **3.10 MEDIA EVENTS AND MEDIA COVERAGE**

This district did not designate a particular event as a media event. Instead, the TNC solicited and received media coverage for all of the community and school-wide events. The chef events attracted TV coverage from the regional network affiliates, Breakfast with the Stars events generated local radio coverage, and the community and school-wide events were covered by the local newspapers.

USDA-disseminated Disney PSAs using the characters from "The Lion King" to talk about good nutrition represented another effort to get the TN message out through the media. Eighty-two percent of the fourth grade students surveyed recalled seeing the Disney characters Pumba and Timon talk about good nutrition on television (60 percent recalled it many times and 22 percent at least once).

### 3.11 PARENT INVOLVEMENT

#### 3.11.1 Parent Awareness of Team Nutrition

Parents of the TN students were potentially involved through the media, through school-wide and community-wide activities, and through take-home materials from the Scholastic modules. The telephone interviews with fourth grade parents assessed the degree of these various types of involvement.

**Table 3j. Parent Awareness of Team Nutrition**

<b>Percent of Fourth Grade Parents Reporting They:</b>	<b>%</b>
Heard of Team Nutrition through any media (Net)	59
Heard of Team Nutrition on the television	37
Heard of Team Nutrition on the radio	16
Heard of Team Nutrition in the newspaper	42
Heard of any TN event (Net)	95
Were aware of a TN community event	56
Were aware of a TN classroom event	92
Were aware of a TN school-wide event (outside of classroom)	76
Participated in a TN activity	31
N (number of parents completing questionnaires)	(103)

As shown in Table 3j, 59 percent of the fourth grade parents in Tennessee had heard Team Nutrition mentioned in the media, mostly in the newspaper (42 percent) and on television (37 percent), but also on the radio (16 percent). Almost all of the parents were aware of either a classroom (92 percent), school-wide (76 percent), or community-wide (56 percent) TN event. Almost one-third (31 percent) of the parents said they had actually participated in a TN event.

#### 3.11.2 Nutrition Education Activities in the Home

Most (87 percent) of the fourth grade parents reported participating in some nutrition activity with their child at home (Table 3k), including family nutrition projects (68 percent), other nutrition homework (64 percent), and family reading materials (51 percent).

**Table 3k. Percent of Fourth Grade Parents Reporting Participation in Nutrition Activities in the Home**

<b>Home Activities</b>	<b>%</b>
Conducted any home activities	87
Family nutrition projects	68
Other nutrition homework	64
Family reading materials	51
Other activities	24
N (number of parents completing questionnaires)	(103)

Most of the parents surveyed in Hamblen County (81 percent) said they had completed at least 1 of the 8 parent information sheets (reproducibles), with an average of 4.2 sheets completed (Table 3l). Only 17 percent recalled receiving the parent newsletter, while 25 percent said their children received the children’s magazine. Eighteen percent said they spent time with their child using these materials.

**Table 3l. Parent Use of Take Home Team Nutrition Materials**

Percent completing any of eight parent information sheets (reproducibles)	81%
Mean number of parent information sheets (reproducibles) used	(4.2)
Percent receiving a copy of “Take Out,” TN newsletter for parents	17%
Percent whose child received “Foodworks,” TN children’s magazine	25%
Percent spending time with child using “Take Out” or “Foodworks”	18%
N (number of parents completing questionnaires)	(103)

As shown in Table 3m, The parent information sheets (reproducibles) were rated positively by over 90 percent of the parents using them on every dimension except the time required to complete them (70 percent). Eighty-six percent of the parents said they liked all or most of the sheets. Of the few parents who remembered the Scholastic parent newsletter, “Foodworks,” all found it useful and easy to understand.

**Table 3m. Parent Opinions of Take Home Team Nutrition Materials**

<b>Percent of Parents Agreeing or Agreeing Strongly That:</b>	<b>%</b>
Parent information sheets (reproducibles) were interesting to child.	95
There was enough time to complete parent information sheet (reproducibles) activities.	70
The parent information sheets (reproducibles) were important to the child.	96
The child had fun doing parent information sheets (reproducibles).	95
Parent was able to understand information sheets (reproducibles).	96
Sheets gave parent other ideas to practice good nutrition.	93
<b>Percent of Parents Who Liked All or Most of the Parent Information Sheets (reproducibles).</b>	86
N (number of parents completing questionnaires and using parent information sheets [reproducibles]).	(80)
<b>Percent of Parents Agreeing or Agreeing Strongly That:</b>	
“Take Out” provided useful information.	100
Parent could understand information in “Take Out.”	100
N (number of parents completing questionnaires and receiving “Take Out”)	(17)

### 3.12 LESSONS LEARNED IN HAMBLÉN COUNTY

There are some very important lessons to be learned from this community, including:

- **Capitalize on established networks and contacts.** The TNC had a considerable network of contacts throughout her tenure. Rather than reinventing the wheel, she built Team Nutrition and its concepts into existing programs and tied it to other nutritional programs such as 5-A-Day. As she frequently commented during the interviews, “I don’t know how I would have accomplished it all if I had to start from scratch.”
- **Anticipate a lot of work to coordinate Team Nutrition at the onset.** Originally, the TNC allocated 50 to 60 percent of her time to the project. Realistically, it consumed 80 to 90 percent of her time. In hindsight, the TNC felt that an additional full-time equivalent would have been helpful to the implementation.
- **Be supportive and enthusiastic.** The professionalism and enthusiasm displayed by every member of the implementation staff of this district, from the superintendent of schools to the teachers and food service staff, worked to create a very successful program implementation.

- **Involve students of all grade levels.** As evidenced by the “Five Alive” team’s participation in the chef events and the Nutrition Advisory Committee’s involvement in menu development, the active involvement of the students in all grade levels can be instrumental in completing the events and providing peer leadership for younger students.
- **Provide central support for coordinating material-gathering for lessons.** Schools and districts should be prepared to provide assistance to teachers in assembling materials and supplies for classroom lessons.

Overall, the experience of Hamblen County demonstrates the importance of community involvement and outreach. Involvement in professional and community organizations can assist in leveraging resources and generating ideas in support of school-wide health initiatives. Team Nutrition strongly encourages the development of community partners for just these reasons.

The sense of community spirit displayed by the staff and supported by the administrators contributed significantly to the successful implementation of Team Nutrition and to the healthy eating habits of the county’s school children.

## **CHAPTER 4: TULSA SCHOOL DISTRICT CASE STUDY**

#### 4.1 SETTING THE STAGE: TULSA AND THE TULSA PUBLIC SCHOOLS

**Table 4a. Tulsa Public Schools**

<b>Elementary School Population</b>	<b>Number of Elementary Schools</b>	<b>Percent of Elementary School Student Population Composed of Minority Students</b>	<b>Percent of Elementary School Students Receiving Free/Reduced Meals</b>	<b>Existing Nutrition Education Curricula in the District</b>	<b>Food Service Staff Trained in Dietary Guidelines</b>
22,062	59	45.4	65	No	No

Table 4a contains information on the demographics and status of nutrition education and food service training in the pilot community prior to the introduction of Team Nutrition. Information in this table was drawn from an application submitted to USDA by school districts interested in becoming pilot communities and is useful to understanding the environment into which Team Nutrition was introduced.

The 43rd largest city in the United States, Tulsa, Oklahoma (population 400,000), enjoys a diverse economy of farming, oil and gas production, aerospace technology, telecommunications, and manufacturing.

The Tulsa school district serves 22,062 students in 59 elementary schools as shown in Table 4a. Sixty-five percent of the children have applied for free or reduced-priced school lunches. The students' ethnic composition is 54.6 percent Caucasian and 45.4 percent African American, Hispanic, Native American, and Asian/Pacific Islander.

Prior to being selected as a TN Pilot Implementation community, there were no existing district-approved nutrition education curricula. The district food service staff was unaware of any classroom curriculum or instruction; however, they believed that nutrition was covered minimally in some health education classes. In addition, the district food service staff had not received training in implementing the Dietary Guidelines at any time during the past 2 years.

## **4.2 PLANNING FOR TEAM NUTRITION**

### ***4.2.1 Applying for the USDA Team Nutrition Pilot Implementation Project***

To obtain a program grant to improve students' nutrition education and the relationship between food service staff and school personnel, the school district's director of child nutrition services contacted the State Department of Education's Nutrition Services. She was referred to the TN Pilot project and, after reviewing the information, determined that the project would be a "perfect bridge between food service and education." The superintendent of the Tulsa school district supported the decision to apply.

By the time the district learned about the project, staff had only 1 week to prepare the application. The application identified general plans for implementation and established that a full-time nutrition education dietitian would serve as the TNC and manage the project. The TNC's responsibilities embodied coordinating all project activities and program implementation, including interagency collaborations, parent involvement, staff development, interdisciplinary curricular integration, and the evaluation activities required under the project. The application also identified potential pilot implementation schools selected by the TNC and the district's assistant superintendent for curriculum instruction.

### ***4.2.2 Planning for Project Implementation***

#### *Selecting and Recruiting the Schools*

A list of schools that could potentially serve as implementation schools was presented to the elementary school directors (supervisors of the district's elementary school principals) for review. The directors nominated several schools and a few alternatives that they felt would be most receptive to the project.

At a meeting on November 2, the TNC presented Team Nutrition to the principals and some of the teachers of the selected schools. She informed them what would be required of the participating schools, discussed their concerns, and asked for volunteers. All of the attending principals volunteered. Final selection of the schools was based on the level of interest and potential involvement of the principals, as well as the locations of the schools.

enlisting the support of the assistant superintendent for curriculum development was particularly essential in gaining interest and support from the schools.

### *Selecting Activities and Building Collaborative Relationships*

As a result of that meeting, the Tulsa school district identified the community and the school-based activities to be implemented during the project, continued making contacts to build community coalitions, and prepared an implementation plan specifying the activities and the timeframe for implementation.

The implementation plan submitted to USDA on December 7, 1995, included ideas for classroom implementation, media events, and the following activities for the spring semester:

- Safe Kids Fair—an existing community event that included a chef activity.
- Bread-in-a-Bag—a cafeteria activity to be held at all four implementation schools.
- Fat Facts Week—a cafeteria and parent-involvement event to be held at all implementation schools.
- Fruits, Vegetables, and Grains Tasting Party—a cafeteria and chef activity to be held at all four schools.
- Various parent involvement activities, including a school program where children would perform nutrition-related events, a parent luncheon, and three parent newsletters.

School-based activities were developed by the TNC by establishing contacts with, and making presentations to, community partners such as the Oklahoma State University (OSU) Extension, Oklahoma State Department of Education, and area chefs.

### *Developing Relationships With the Schools*

In November, the TNC met with the principal and teachers of each implementation school to identify a contact person and discuss the plans for the project and the materials they would need. Principals and teachers served as the school contacts. One school designated one contact for each grade level. A second meeting with each school in January yielded ideas and feedback on the cafeteria activities, the Lunchroom Links, and the classroom activities. The TNC met with the designated school contacts in February to discuss the proposed Lunchroom Links and the materials needed for these activities.

### 4.3 THE TEAM NUTRITION IMPLEMENTATION SCHOOLS

**Table 4b. Team Nutrition Implementation Schools**

School	School Population	Percent of Student Population Minority	Percent Receiving Free/Reduced Meals	Type of Kitchen
Chouteau	312	27	55.4	Combination
Mark Twain	366	22	93.9	Production
Kerr	407	27	65.1	Combination
Sandburg	212	21	57	Production

The four implementation schools selected for the project were Chouteau, Mark Twain, Kerr, and Sandburg. Demographic information for each school is provided in Table 4b. All of the schools were similar to each other in terms of racial/ethnic breakdown but had smaller minority populations than the Tulsa school district as a whole. Mark Twain school had a considerably higher percentage of their students receiving free/reduced meals than the other implementation schools and the school district as a whole.

Prior to the TN pilot project, the amount of nutrition education in the four implementation schools was limited. One of the principals noted, “We’ve had so many changes and so many more requirements, and we’re spending so much time trying to focus on the basics, that nutrition is almost an afterthought.”

Interviews with the school principals before implementation revealed that three of them believed that their school’s participation in the project was entirely voluntary. As one principal stated, “We don’t feel it is being forced on us, and we would not have volunteered to have this program if we didn’t think it would be beneficial for the children.”

However, one principal acknowledged that even though participation was optional, it was clear that “refusal would not be good.” This principal noted that being more involved in the school selection process might have made the project more “palatable.” The other principals indicated that they felt involved in the project from the beginning, particularly since the TNC had visited the schools, talked to the principals and teachers about the project, and let them make decisions about some of the activities to be conducted.

All of the principals indicated that they felt teaching nutrition education was an important task for the schools. One principal commented, “It is as important to teach nutrition as it is the basic

academics—to help children form good habits that will last them the rest of their lives. Nutrition is a basic life skill.” The principals indicated that having all of the materials available to teachers would greatly enhance their interest in teaching nutrition because they will not have to develop their own resources and lesson plans. The principals also expressed hope that the project not only would improve the quality of the food served in the school cafeteria but also the students’ food choices as well.

All of the principals perceived their role in the project as primarily that of “cheerleader”—encouraging and supporting teachers, students, and food service personnel. One principal planned to serve as the school contact with the TNC. Another alluded to enlisting assistance for the cafeteria manager during the project because of the extra work that the project might create for cafeteria staff.

At the time of these interviews, the principals had very little knowledge about the pilot project evaluation. Although they knew that an evaluation would be conducted, they were not aware of what would be required of the teachers and students for the evaluation.

#### **4.4 TEACHER TRAINING FOR IMPLEMENTING THE SCHOLASTIC MODULES**

##### ***4.4.1 Description of the Tulsa Training***

Most of the teachers participated in the two training sessions. The initial training was implemented during two 2-hour sessions after the school day. However, the teachers appeared distracted and impatient during the first training. To alleviate the problem, the second training was scheduled during the school day. The district provided substitutes for the teachers involved in the training. The teachers’ level of involvement in scheduling the training varied. Some teachers provided input regarding scheduling. However, in one school, the teachers were not given the opportunity to provide input and were required to attend. This may have contributed to negative comments about the training.

#### 4.4.2 *Teacher Evaluations and Perceptions of the Trainings*

**Table 4c. Teacher Opinions of Training for Implementing the Scholastic Modules**

<b>Percent of Teachers Agreeing That:</b>	<b>%</b>
The training was relevant to teaching the lessons.	79
The training was necessary for teaching the lessons.	42
The training improved your ability to teach the lessons.	46
N (number of teachers completing questionnaires)	(28)

As shown in Table 4c, teachers trained in Tulsa felt that the training was relevant to the lessons, but less than one-half felt that the training was necessary for teaching the lessons or improved their ability to teach the lessons.

In the second training session, the teachers' responses to questions raised by the trainers demonstrated a solid understanding of, and interest in, the nutrition concepts highlighted in the initial training. They shared their experiences of applying some of the behavioral techniques introduced in the initial training session in their classroom settings. In addition, they expressed an interest in learning more if time allowed. Despite the challenges to classroom implementation presented by having too little time to prepare and to gather supplies, the teachers noted that they had developed some resourceful methods to make better use of their time (e.g., preparing with peers and dividing responsibilities).

The general consensus was that the second session was more effective than the first. As one teacher commented, "This training session (the second) was much more useable and valuable than the first." Suggestions for future training included holding all training during the school hours, spending more time on nutrition-related background information, having the Scholastic teachers' guide, and providing more opportunities for teachers to work together and share ideas.

### 4.5 CLASSROOM IMPLEMENTATION OF THE SCHOLASTIC MODULES

#### 4.5.1 *Teacher Opinions of Nutrition Education*

As shown in Table 4d, teachers in the three participating grade levels demonstrated a high level of motivation at the start of the project for teaching nutrition, with near unanimity in the belief that the classroom is an appropriate place to teach nutrition. Nearly all of the teachers

surveyed expressed a high level of enthusiasm for teaching nutrition, a desire for incorporating nutrition activities into the classroom, and plans for actually doing it. Slightly less enthusiasm was noted for students' perceived preference for nutrition compared with other subjects and for teacher's individual motivation to influence the food choices their students make outside of school. The Tulsa teachers were also nearly unanimous in their belief in the benefits of teaching nutrition (Table 4e).

**Table 4d. Teacher Motivation Prior to Implementation (Pretest Percentages)**

Motivational Items	%
Percent indicating interest in teaching nutrition	97
Percent indicating interest in incorporating nutrition activities into their classrooms	100
Percent indicating that students like nutrition subjects as well as other subjects	79
Percent indicating that they try to influence the food choices their students make outside of school	76
Percent indicating that they plan to incorporate nutrition more often into their classroom activities	90
Percent indicating that the classroom is an appropriate place to teach students about nutrition	97
N (number of teachers completing questionnaires)	(30)

**Table 4e. Percent of Teachers Agreeing With Statements Regarding the Benefits of Nutrition Education (Pretest Percentages)**

Potential Benefits of Nutrition Education	%
Nutrition education in the classroom will help children choose healthier foods to eat.	96
Teaching nutrition will help reinforce other subjects that they teach.	97
Good nutrition can positively affect students' class performances.	100

#### **4.5.2 Adherence to Curriculum**

As described in Chapter 1, the Scholastic kits are composed of nine lessons for Module 1 (Pre K – K) and eight lessons each for Modules 2 (Grades 1-2) and 3 (Grades 3-5). During teacher training for the pilot, Module 1 teachers were told they should complete at least eight of the nine lessons and that they should conduct three activities per week, with no explicit instructions as to which activities. The teachers for Modules 2 and 3 were instructed to teach all eight lessons, complete the Getting Started session and each of the activities included in the lesson, complete the Lunchroom Link for at least four of the lessons, and use the student and parent

reproducibles as directed in the Scholastic lessons. Adherence to the curricula was measured by the number of times the teachers reported (through activity logs) completing the recommended lessons, activities, and Lunchroom Links, as well as the degree to which they used the materials as directed. Because there were no explicit activities required for Module 1, the data on activities and materials are not used in measuring adherence for this module.

As shown in Table 4f, the Tulsa teachers were quite diligent about conducting the Scholastic lessons. Kindergarten teachers reported conducting most of the required nine lessons in Module 1. The Grade 2 teachers also reported teaching all 8 of the lessons, while the fourth grade teachers taught an average of 7.3 of the 8 lessons. The average duration of the lessons was 1.78 hours for Module 1, 2.18 hours for Module 2, and 1.68 hours for Module 3. The cumulative exposure to the lessons per class was 14.24 hours per kindergarten class, 17.44 hours per second grade class, and 12.21 hours per fourth grade class.

**Table 4f. Classroom Implementation of Scholastic Module**

	<b>Module 1 (Kindergarten)</b>	<b>Module 2 (Grade 2)</b>	<b>Module 3 (Grade 4)</b>	<b>All Modules</b>
# of Scholastic Lessons (Per module)	9	8	8	25
Avg. # of Lessons Taught <sup>1</sup>	8.0	8.0	7.3	7.8
Avg. Duration Per Lesson Taught (Hrs) <sup>2</sup>	1.78	2.18	1.68	1.88
Avg. Planning Time Per Lesson Taught (Hrs) <sup>2</sup>	1.51	1.17	1.13	1.28
Cumulative Duration Per Class (Hrs) <sup>1</sup>	14.24	17.44	12.21	14.55

<sup>1</sup> Averages reflect cumulative totals divided by the number of teachers/sections.

<sup>2</sup> Averages reflect cumulative totals divided by the number of lessons taught in each module.

The Tulsa teachers also reported conducting most of the recommended activities with each lesson (Table 4g). In addition, they appear to have used the materials included with the Scholastic modules as directed, with more frequent exceptions among the fourth grade teachers (Table 4h).

**Table 4g. Average Number of Times Activities Were Conducted Per Class**

Lesson	Module 2 (Grade 2)		Module 3 (Grade 4)	
	Recommended/ Available	Conducted	Recommended/ Available	Conducted
Getting Started	8	7.2	8	6.8
Activity 1	8	7.8	8	7.0
Activity 2	8	7.7	8	6.5
Activity 3	2	1.7	2	1.6
Lunchroom Link	4	4.5	4	3.7
Home Connection	7	5.1	6	3.3
Exercise Connection	0	0.2	1	0.6
Wrap It Up	8	4.1	8	1.5
Taking It Further	8	2.5	8	1.4

**Table 4h. Average Number of Times Materials Were Used Per Class**

Material	Module 2 (Grade 2)		Module 3 (Grade 4)	
	Recommended	Used	Recommended	Used
Parent Information Sheets (reproducibles)	7	6.7	7	4.6
Student Information Sheets (reproducibles)	8	6.6	7	5.9
Student Magazine	2	1.9	6	4.2
Video	4	3.2	5	3.1

The TNC stated that the implementation was highly successful, although the amount of time it took to accomplish things was clearly a barrier. Overall, the lessons were viewed as excellent, and the children were described as enjoying the project. The TNC reported, “Everyone was surprised at how much the children liked the curriculum. The teachers got very excited about it, and the principals also were very supportive.”

As noted by the TNC, not only were the hands-on activities the most successful and well-liked elements of the program, but they also served to greatly increase the students’ knowledge

about nutrition. Children who participated in the project can “rattle off” the food pyramid and talk knowledgeably about reducing fat in foods.

In interviews, every teacher reported feeling pressured and frustrated by the short timeframe established for implementing the Scholastic curriculum, especially during the normally hectic last 2 months of the school year. One teacher’s comments summed up the general attitude: “I was mainly feeling too much pressure to get things done and not being able to do them. The concept is good, the activities are good, but it was putting too much into a small space, timewise.” All of the teachers felt that more time would facilitate future implementations.

### *Implementation Methods*

Interviews with fourth grade teachers in each of the implementation schools revealed a great deal of variability across the four schools in the method for implementing the Scholastic curriculum.

**Mark Twain.** The three fourth grade teachers at Mark Twain specialized in reading and language arts, social studies and art, and science and math. There are three fourth grade classes that rotate across the three teachers. In this school, the teachers divided up the lessons by activities according to whether the activity could be integrated into their subjects. As a result, no teacher taught an entire lesson, and each teacher taught a single activity on three separate occasions. This method gave the teachers responsibility for deciding which activities to teach.

**Kerr.** The fourth grade teachers at Kerr also taught in teams specializing in different subject areas. However, they did not divide the lessons by activities. Instead, the teachers taught all eight lessons to one of their classes, so that students in the fourth grade received all eight lessons from one of the three teachers.

**Chouteau.** The two fourth grade teachers at Chouteau had self-contained classrooms with some rotation in the afternoons. They decided to split the curriculum—each teacher taught four lessons to both classes during the afternoon rotation.

**Sandburg.** Although six teachers teach fourth grade at Sandburg, it was decided that one teacher would teach the Scholastic module to all of the fourth grade students. This teacher initially volunteered to teach the lessons because of presumed flexibility in selecting activities.

activities met their nutrition-related teaching needs. Large majorities agreed that the Scholastic materials make it easy to teach nutrition (80 percent) and that they will teach more nutrition if the materials are available, but only 54 percent said the Scholastic materials are better than other nutrition materials they have used.

**Table 4i. Teacher Attitudes Toward Scholastic Materials**

<b>Teachers Who Reported That They Were Satisfied With Scholastic Materials</b>	<b>73%</b>
<b>Percent of Teachers Who Agree or Strongly Agree That:</b>	
The Scholastic materials were appropriate for the developmental level of the students in my class.	88
The Scholastic materials were appropriate for the educational levels of the students in my class.	84
The Scholastic materials were culturally appropriate for the students in my class.	96
The time required to prepare to teach the Scholastic lessons was reasonable (considering that they were new to me).	56
The time required to teach the Scholastic lessons was reasonable.	52
The content of the Scholastic materials did provide sufficient background for my nutrition-related teaching needs.	32
The classroom activities met my nutrition-related teaching needs.	56
The activities suggested in the Scholastic materials were appropriate for my classroom.	88
Having the Scholastic materials makes it easy to teach about nutrition.	80
I will teach more about good nutrition in the future if I can use the Scholastic materials again.	84
The Scholastic materials are better than other nutrition teaching materials I have used.	54
N (number of teachers completing questionnaires)	(25)

In interviews, some teachers indicated that preparation time was not a problem because they already did a lot of hands-on activities and had experience putting together a lot of materials for a lesson. Almost all of the teachers noted that preparation time would have been more problematic without the TNC's assistance in helping them assemble materials and supplies.

Some teachers were dissatisfied with the length of time required to implement a lesson because their perception of a "lesson" was what the curriculum described as an "activity." As a result, a few teachers determined the amount of time they could spend on each lesson (approximately 45 minutes) and taught as much as they could within that timeframe.

In general, teacher attitudes appear to be related to whether or not Team Nutrition was team taught. Teachers who taught individual activities rather than entire lessons (and thus reduced their implementation time) reported more satisfaction than those who did not.

Even though most of the teachers believed that the students clearly benefited from the curriculum, two teachers felt that the curriculum did not work in their classrooms. One teacher would not recommend the curriculum to other schools or teachers; another noted that “there was not enough time to get the State-mandated things done without adding nutrition.” These teachers’ attitudes may have been negatively influenced by the principal’s view that the school’s participation in the project was less than completely voluntary. Also, the pressure on teachers to focus on the basics in their classrooms may have affected their perceptions if they felt the curriculum took time away from those basic academics.

All of the fourth grade teachers liked the student *Food Works Magazine* and the hands-on activities that involved tasting, measuring, and comparing. Most felt that the materials supported the themes of the lessons adequately, that the lessons were effective with respect to either engaging students’ interest or achieving their nutrition education objectives, and were appropriate to the students’ developmental and educational levels.

All of the fourth grade teachers felt that the Teacher’s Guide was too vague and did not provide enough supporting resources and background information for teaching the lessons. Most of the teachers felt that their limited experience in teaching nutrition and lack of knowledge about nutrition prohibited them from properly teaching the curriculum without taking extra time to find background information and materials.

Despite these criticisms, most of the fourth grade teachers were very enthusiastic about the curriculum and the TN project as a whole. Only one teacher would not recommend implementing the Scholastic curriculum to other schools or teachers. The teachers were most satisfied because they could see that the children were learning a great deal from the project. Some of the teachers’ comments included:

- “It was very time consuming, but it was worth it; the kids enjoyed it very much.”
- “It’s a wonderful program, and the kids benefit.”
- “Hearing the children talking about food labels and nutrition choices outside of class tells me that they learned something.”

- “I see the children reading labels and making changes in the lunch line.”
- “At first I was opposed to the project, but when I saw how much the kids learned I became a big fan.”

#### **4.5.4. *Changes in Teacher Behaviors***

Only two fourth grade teachers said that their involvement in the project changed the way they used food as an incentive in the classroom. One teacher began bringing in more nutritious snacks such as granola and flavored rice cakes. The other reconsidered using food at all in the classroom, choosing instead to serve as a model for good nutrition behaviors to the students. Several teachers indicated that they did not use food as an incentive in their classrooms, but two teachers said that they would continue to use candy because they felt “you had to have a treat sometime.”

#### **4.5.5. *Involvement of Cafeteria Staff***

The type and amount of cafeteria staff participation varied across the four schools. Their involvement included supplying materials to the teachers, conducting food activities for the kindergarten class, visiting the classrooms when the children were doing an activity, and providing students with a cafeteria tour.

The cafeteria staff interviewed after project implementation were generally very positive about the project. One cafeteria manager commented, “When I first found out about it, I thought ‘Oh no, I don’t want to do this,’ but after I saw the kids’ reactions, my attitude changed a lot. I’m very positive about the program now.” The kitchen manager at one school, though, felt that more effective communication was needed with teachers, particularly in providing the staff with sufficient time to prepare for an activity. All of the cafeteria staff felt well supported by the TNC and believed that they worked as a team on many of the activities.

Seven of the eight food service staff members interviewed indicated that they had observed positive changes in the students’ behaviors since the project was implemented. Some of their comments included:

- “I see more fruits and vegetables being taken by the kids who are involved in Team Nutrition.”

- “The intake of the Chef Salad option has increased since March. I think the kids are eating more fruits and vegetables.”
- “I hear the children discuss nutrition when they come through the line, and they will stop and look at the menu analysis and talk about it and they talk about the pyramid a lot; we never heard that before.”
- “The fourth grade children are taking 1 percent milk instead of whole milk and are taking a plain apple instead of a caramel apple. Kids are discussing the fat content of foods among themselves, especially the girls. They say ‘Should we eat that? It’s got such and such grams of fat.’”

#### **4.6 IMPLEMENTATION OF SCHOOL-BASED CORE ACTIVITIES**

A timeline depicting the implementation of the various community and school-wide activities is provided in Figure 4a.

All four implementation schools conducted the following four school-based activities:

- Bread-in-a-Bag—a cafeteria activity.
- Fat Facts Week—a cafeteria and parent involvement activity.
- Fruits, Vegetables, and Grains Tasting Party—a cafeteria and chef activity.
- School Program—presentation of skits by the children and a chef preparation and tasting of healthy snacks.

Overall, the teachers and food service staff were very enthusiastic about these events and felt that they were “very successful.” Some food service staff were concerned about the amount of extra work for them, but they all indicated that the events were beneficial for the students.

# Figure 4a: Tulsa, Oklahoma

## Legend

- Ⓢ School Event
- ⓓ District-Wide Event
- Ⓜ Media Event
- ⓕ Food Service Training

4-16

ⓕ

Training for Food Pyramid, Dietary Guidelines,  
Recipe Manipulation, Marketing Child Nutrition

DISTRICT WIDE 22-MAR-96

Ⓜ

Parent Newsletter

IMPLEMENTATION SCHOOLS 19-APR-96

#### **4.6.1 Bread-in-a-Bag**

The Bread-in-a-Bag activity targeted primarily second and fourth grade students. It introduced children to a major food crop produced in Oklahoma and emphasized the importance of bread in our diet.

The children observed wheat being ground and received a recipe for making Bread-in-a-Bag at home. The cafeteria staff baked the bread, and the children tasted it.

Because this activity required approximately 2 hours, the major challenge in implementing it was scheduling it with the schools. Another obstacle was that the children were so excited they had difficulty keeping quiet so everyone could hear. Despite these challenges, and the fact that one teacher was unsure of the activity's nutritional objectives, the fourth grade teachers and cafeteria staff who were interviewed believed unanimously that the activity was excellent for children. The children were "very excited about it and learned a lot." Some children told the TNC that they had never eaten whole wheat bread before, but they would eat it now because they made it.

#### **4.6.2 Fat Facts Week**

Fat Facts Week was a school-wide event that involved 1 week of cafeteria activities. For this activity, the fourth grade classes prepared posters of their favorite snack foods (complete with bar graphs detailing the percentage of fat in each snack) and displayed them in the cafeteria for the week. Also displayed was a nutritional analysis of the food served in the cafeteria, with specific emphasis on the amount of fat the food contained. This was so successful that the teachers asked the TNC to continue doing it at the schools throughout the rest of the year.

One day during the week, parents were invited to eat lunch with the students. During this luncheon, parents and students were given low-fat food samples to taste and an evaluation form to rate the foods on whether they liked them and wanted them again.

According to the TNC, a major challenge in implementing this activity was coordinating multiple activities in a school district. For example, two schools scheduled their parent luncheon on the same day. This required advanced planning for additional food service staff to assist in the implementation of the activity and make parent contacts.

What facilitated this activity's implementation was access to nutritional analysis through the district's Child Nutrition Program. Another benefit was the TNC's access to USDA library resources and to food vendors. Each time a vendor came to the district, the TNC asked for donations of food to take to the schools. These donations were used for taste-testing during the parent luncheon.

The TNC noted the many benefits of this activity. For the parents and teachers, the nutritional analysis was most successful in communicating the nutrition messages. For most of the students, the fourth graders' displays were the most successful. But for the younger children, the palatable taste of the low-fat foods was the key factor in transmitting the nutrition messages.

Again, the fourth grade teachers and cafeteria staff were unanimous in their praise of the effectiveness of this activity in transmitting nutrition education messages and changing children's behaviors.

#### **4.6.3 Fruits, Vegetables, and Grain-Tasting Party**

For this activity, a chef held a tasting party at each school and talked about different fruits, vegetables, and grains. The major challenge to implementing this activity was the cost of food (only one chef donated the food used for the tasting). Another problem arose when chefs canceled the night before the event, compelling the TNC to find enough chefs willing to volunteer as backup chefs. Cutting up the fruits and vegetables was time consuming, but the TNC noted that cafeteria staff and even teachers volunteered to help out with this task.

The teachers, cafeteria staff, and TNC all reported that the students responded well to the chefs and that the chefs were very good about "talking at the kids' levels." The TNC noted that it was "definitely the high point of the whole program." One cafeteria manager commented that she was impressed by the kindergarten children who tried everything at the vegetable tasting.

### **4.7 FOOD SERVICE ACTIVITIES AND CHANGES**

#### **4.7.1 Plans for Meeting Dietary Guidelines**

The district director for child nutrition indicated that involvement in Team Nutrition has not affected the schedule for meeting dietary guidelines, although it has given them information on what needs to be done. The TNC and the district director noted that during the current

academic year, food services had increased bread servings from 8 to 12 in elementary schools and had increased fruits and vegetables to 1 cup per day. They also were purchasing foods lower in fat and training kitchen staff to reduce fat in their cooking.

Cafeteria staff described the steps already in place to make the school meals healthier; they included:

- Not putting as much butter on vegetables.
- Washing and draining the fat from hamburger meat.
- Buying products that have less fat.
- Baking or steaming instead of frying.
- Increasing servings of pasta and breads.
- Offering more fresh fruits and vegetables.
- Using more fruits instead of baked goods for dessert.
- Offering more low-fat frozen desserts such as a frozen fruit bar.
- Using low-fat milk and less oil, butter, eggs, and cheese.

One manager noted that they had not started baking with applesauce yet, but they would soon.

#### **4.7.2 Observations of Food Preparation**

The food preparation activities observed at the implementation schools was not always consistent with the manager's descriptions or with the recipes. For example, several cooks were observed adding butter to the macaroni and cheese, even though it was not in the recipe. In addition, the cooks added salt and oil to the water used to boil the macaroni even though the recipe did not call for such ingredients. Despite assertions that the low-fat practices mandated in the recipes were followed, one school's cafeteria staff added fat when they prepared vegetables. At another school, 1 percent milk was routinely used instead of nonfat milk, even when recipes specified nonfat milk.

These observations suggest that the nutritional analysis provided by the district for their school meals may not always be reliable. The analysis is based on the recipes for the meals and not on the actual practices of the cooks at the schools. The TNC indicated that she was aware that cooks may not be following the recipes and that in the future she plans to focus more time on production.

### **4.7.3 Food Service Staff Training**

According to the TNC, food service staff training was offered to food service personnel in implementation schools on January 24, 1996, and on March 22, 1996. The training in January focused on marketing and public relations skills for food service managers and submanagers. The training in March for 108 food service workers focused on the food pyramid; dietary guidelines; reducing fat, sugar, and sodium; and marketing child nutrition. During this training, TN materials were handed out; the TN video was shown; and USDA library materials, books, and videos were used. The training took 8 hours to implement and 120 hours to plan. Also during this training, a teleconference was held by the State Department covering new menu planning and lowering fat in the diet.

Food service staff interviewed in May either did not attend this training or had vague recollections of it. None of the line workers who were interviewed reported that they had received any nutrition training. One worker remembered a meeting where they discussed possible menus.

Only one cafeteria manager reported attending an all-day meeting in March that focused on Team Nutrition. As she noted: "They talked to us about nutritional values and how to serve certain items. That's all I remember." The other cafeteria managers' recollections varied: One reported receiving training during a manager's meeting in March in which they discussed dietary guidelines and saw a video; a second remembered that the video was on how to prepare foods and use garnishes; and the third reported that she received training during the monthly manager's meeting but that menus are the focus of these meetings.

## **4.8 COMMUNITY ACTIVITY**

The community activity, Safe Children, was cosponsored by the Tulsa school district and St. Francis Hospital and involved six booths devoted to Team Nutrition and its partners. Team Nutrition's booth had a chef demonstrate cooking safety and preparing healthy snacks using the TN recipes. The TN pamphlets, posters, and video were on display in the booth. Other materials included a newsletter about healthy recipes and food for tasting.

The TNC reported that about 1,000 people attended this event and that it was very successful. She noted that, "The people who put the event together kept coming by the booth with the chef and saying they were glad that we came. The chef was very popular, and parents and kids came back two or three times."

The TNC was disappointed that the advertisements for this event did not include nutrition as an activity or Team Nutrition as a sponsor. The TNC will remedy the situation if the event is held again next year.

#### **4.9 COMMUNITY PARTNERS**

As described earlier, relationships with community partners were initiated and developed by the TNC. Initially, the TNC established contacts with, and made presentations to, Oklahoma State University (OSU) Extension, Oklahoma State Department of Education, and area chefs. For example, in January 1996, the TNC made a presentation to the American Culinary Federation in Tulsa and asked for volunteers for the school-based chef activities and the community event.

These groups contributed significantly to the success of several of the school-based activities. The Bread-in-a-Bag activity was developed by the Child Nutrition Programs of the Oklahoma State Department of Education. The State Nutrition, Education, and Training (NET) coordinator trained the TNC to implement the activity. Area chefs participated in the Fruits, Vegetables, and Grain-Tasting Party, and wholesale food vendors donated foods for this event as well.

The TNC was pleased with the level of involvement of community partners in these events but noted that, because of the chefs' work schedules, she had to be flexible in scheduling the chef events. She had a second chef on call for some events in case the scheduled chef could not attend. In addition, she was impressed with the cooperation she received from the wholesale food vendors. They willingly supplied food donations for tastings, seeing the potential for new business.

During the winter of 1995-96, contacts were made with other individuals to obtain additional nutrition education resources and donations of food and materials for use in the school-wide and community events. These contacts included the Sugar Association, the American Heart Association, the Florida Department of Citrus, the American Cancer Society, the Dairy Council, Dole Foods, and Dr. Ellen Kramer from Tufts University.

Of the groups contacted, several supplied information or personally staffed booths at the community event. These included WIC, the American Heart Association, the American Cancer Society, OSU Extension, and the Tulsa County Health Department. The American Heart Association and American Cancer Society only brought materials and dropped them off for display. However, representatives from WIC and OSU did staff their displays, enabling the TNC to talk with them about the TN project.

Interviews with representatives of community partners organizations and the second site visit interview with the TNC confirmed that the American Heart Association and the American Cancer Society had little involvement with the TN project other than supplying materials for the booth at the community event. However, both organizations expressed interest in more participation next year.

Finally, the National Dairy Council, the school nurse, Southern Hills Country Club, high school athletes, and other members of the community donated their time and supplies to the media event described below.

#### **4.10 MEDIA EVENTS AND MEDIA COVERAGE**

One school held a media event to coincide with a visit from regional USDA and WIC officials intent on visiting a TN site and learning about Team Nutrition. In honor of this visit, the TNC arranged a fair, the Great Nutrition Adventure, at which fourth grade students spent a specified amount of time tasting food prepared by a chef and learning about snacks, the food pyramid, health, and physical activity.

Six teachers, 90 fourth grade students, 3 food service workers, 16 administrators, 28 people from other community organizations, and 6 to 10 media people participated in the event. *Tulsa World Newspaper*, all of the network affiliate TV stations, and the Tulsa School District station covered the activities. The Fox Network affiliate is considering using it as a documentary.

At another school's media event, the education reporter from a local TV station interviewed the TNC and principal, and approximately 20 second grade students participated in a presentation on Team Nutrition during the 6 p.m. news. One minute in length, the coverage introduced Tulsa as a TN site, showed the children getting their lunches, and interviewed them about what they were learning in class.

The TNC also developed and sent a press release to a radio station reporter who subsequently interviewed the TNC and the director of child nutrition services for a segment that aired on the news throughout weekend broadcasts. At two schools, a TV station crew visited during the Bread-in-a-Bag activity and filmed the children making the bread.

The TNC learned the procedures for getting media coverage at a media conference in Tulsa. She provided the editor of *ACCENT*, a school newsletter, with information to write an article on Team Nutrition. The TNC further facilitated media coverage by preparing a sample article with

background information on nutrition for the media to use. The TNC's media contacts resulted in the Tulsa Public Schools' (TPS) television studio's plan to do a monthly nutrition show.

An article in a regional paper that serves West Tulsa discussed the Bread-in-a-Bag activity at one school and also mentioned another school. Also, two parent newsletters were sent to all four implementation schools regarding Team Nutrition.

USDA-disseminated Disney PSAs using the characters from "The Lion King" to talk about good nutrition represented another effort to get the TN message out through the media. This was apparently successful in reaching the students; 82 percent of the fourth grade students surveyed recalled seeing the Disney characters Pumba and Timon talk about good nutrition on television (55 percent recalled it many times and 27 percent at least once).

#### 4.11 PARENT INVOLVEMENT

##### 4.11.1 Parent Awareness of Team Nutrition

Parents of the TN students were potentially involved through the media, through school-wide and community-wide activities, and through take-home materials from the Scholastic modules. The telephone interviews with fourth grade parents assessed the degree of these various types of involvement.

**Table 4j. Parent Awareness of Team Nutrition**

<b>Percent of Fourth Grade Parents Reporting They:</b>	<b>%</b>
Heard of Team Nutrition through any media (Net)	50
Heard of Team Nutrition on the television	39
Heard of Team Nutrition on the radio	10
Heard of Team Nutrition in the newspaper	28
Heard of any TN event (Net)	90
Were aware of a TN community event	39
Were aware of a TN classroom event	86
Were aware of a TN school-wide event (outside of classroom)	62
Participated in a TN activity	27
N (number of parents completing questionnaires)	(140)

As shown in Table 4j, one-half of the parents of the fourth grade students had heard about Team Nutrition through the television (39 percent), the newspaper (28 percent), or radio (10 percent). Almost all (90 percent) were aware of either a TN classroom (86 percent), school-

wide (62 percent), or community (39 percent) event. Over one-fourth (27 percent) had actually participated in a TN event.

#### **4.11.2 Nutrition Education Activities in the Home**

A large majority (79 percent) of the fourth grade parents reported participating in nutrition activities in the home, including family nutrition projects (36 percent), other nutrition homework (36 percent), and family reading materials (59 percent).

**Table 4k. Percent of Fourth Grade Parents Reporting Participation in Nutrition Activities in the Home**

<b>Home Activities</b>	<b>%</b>
Conducted any home activities	79
Family nutrition projects	36
Other nutrition homework	36
Family reading materials	59
Other activities	27
N (number of parents completing questionnaires)	(140)

Sixty-nine percent of the fourth grade parents said they completed at least one of the eight parent information sheets (reproducibles). On average, they reported completing three of the eight sheets (Table 4l). Only 20 percent reported receiving the parent newsletter, and 24 percent indicated their child received the children’s magazine. Only 11 percent said they used either of these two items with their child.

**Table 4l. Parent Use of Take Home Team Nutrition Materials**

Percent completing any of eight parent information sheets (reproducibles)	69%
Mean number of parent information sheets (reproducibles) used	(3.0)
Percent receiving a copy of “Take Out,” TN newsletter for parents	20%
Percent whose child received “Foodworks,” TN children’s magazine	24%
Percent spending time with child using “Take Out” or “Foodworks”	11%
N (number of parents completing questionnaires)	(181)

As shown in Table 4m, the parent information sheets (reproducibles) were well received by the parents who used them, with the least positive opinions related to the time required to complete them. Nearly all of the few parents who received the Scholastic parent newsletter, “Foodworks,” said it was useful and easy to understand.

**Table 4m. Parent Opinions of Take Home Team Nutrition Materials**

<b>Percent of Parents Agreeing or Agreeing Strongly That:</b>	<b>%</b>
Parent information sheets (reproducibles) were interesting to child.	96
There was enough time to complete parent information sheet (reproducibles) activities.	64
The parent information sheets (reproducibles) were important to the child.	83
The child had fun doing parent information sheets (reproducibles).	90
The parent was able to understand information sheets (reproducibles).	98
The sheets gave the parent other ideas to practice good nutrition.	86
<b>Percent of parents who liked all or most of the parent information sheets (reproducibles).</b>	<b>85</b>
N (number of parents completing questionnaires and using parent information sheet).	(119)
<b>Percent of parents agreeing or agreeing strongly that:</b>	
“Take Out” provided useful information.	95
Parent could understand information in “Take Out.”	100
N (number of parents completing questionnaires and receiving “Take Out”)	(20)

In addition to using the Scholastic parent outreach materials, each of the implementation schools in Tulsa put on a school program for parents and other students. The program included children’s skits on nutrition and a chef who provided taste tests of healthy snacks and recipes for parents. The teachers and the TNC all viewed the activity as being highly successful even though parent involvement was not as high as the TNC had hoped.

Overall, the TNC was disappointed in the level of parent involvement in the project. The TNC wrote and distributed three newsletters for parents providing information on nutrition and upcoming events at each school, but the approval process was so slow at two schools that the newsletters did not get out until a day or two before the event. One successful parent involvement activity occurred unintentionally when “chef day” coincided with the day that parents were invited by the school for a VIP luncheon. As a result, roughly 80 parents were present, and the TNC had the opportunity to talk to several of them and let them taste some of the chef-prepared foods

#### 4.12 LESSONS LEARNED IN TULSA

The implementation in Tulsa provided ample useful information for future implementation of the TN Project.

With regard to the Scholastic curriculum, the Tulsa experience indicated the following:

- **Let the teachers decide.** In schools where teachers team-teach according to specific academic areas, it may be more effective if the teachers select specific activities from the lessons that are relevant to the subjects they teach rather than attempting to teach entire lessons.
- **Provide the teachers with resources.** Teachers need resources or materials that will provide them with background information on nutrition, particularly if they have not taught nutrition before.
- **Plan implementation time accordingly.** Implementation time needs to be carefully considered. The curriculum needs to be implemented over a broader timeframe so that activities and lessons can be better integrated into the existing curriculum. Teachers need to understand that each activity within each lesson may take up to 45 minutes to complete.
- **Involve staff and parents.** Because of the amount of materials and supplies needed to implement the curriculum activities, schools should be prepared to provide assistance to teachers from cafeteria staff or parent volunteers in assembling materials and supplies.
- **Allow time to coordinate activities.** The Tulsa experience indicated that implementing school and community-based activities is very time consuming and requires that a staff member be assigned responsibilities for coordinating the activities. These are the most important activities in a school because of their novelty, visibility, and impact on the children. After community partnerships are more firmly established, the time required for coordination may be reduced.
- **Provide assistance to districts for development of relationships with community partners.** Building community partners and engaging the community in this type of project requires knowledge and skills relating to coalition building and how to approach potential partners. The TNC learned a great deal during the course of the project about how to do this but would have accomplished more if technical assistance had been available on this aspect of the project at its initiation.
- **Recognize that parent involvement takes effort.** The Tulsa experience also suggests that getting parents involved is a difficult task. Some of the lessons learned included having children write letters to invite their parents to participate, combining parent events with other high visibility activities such as chef events or Bread-in-a-Bag events, and continually asking for parent volunteers in the classroom.

- **Monitor food service preparation.** With respect to providing healthier school meals, the experience of the Tulsa project suggests that even when school districts make decisions about lowering fat or increasing servings of fruits and vegetables, these might not be adhered to by cafeteria staff. As a result, implementing healthier school meals may require a greater focus on preparation skills and increased monitoring of food preparation.
- **Make food service training relevant to employees.** The salience of the training activities for food service staff needs to be increased, and greater attempts need to be made to reach the cafeteria line workers and staff—not just the managers.

## **CHAPTER 5: VACAVILLE UNIFIED SCHOOL DISTRICT CASE STUDY**

**5.1 SETTING THE STAGE: VACAVILLE UNIFIED SCHOOL DISTRICT**

**Table 5a. Vacaville Unified School District**

<b>Elementary School Population</b>	<b>Number of Elementary Schools</b>	<b>Percent of Elementary School Student Population Composed of Minority Students</b>	<b>Percent of Elementary School Students Receiving Free/Reduced Meals</b>	<b>Existing Nutrition Education Curricula in the District</b>	<b>Food Service Staff Trained in Dietary Guidelines</b>
7,548	13	30	31	Yes	No

Table 5a contains information on the demographics and status of nutrition education and food

## **5.2 PLANNING FOR TEAM NUTRITION**

### ***5.2.1 Applying for the USDA Team Nutrition Pilot Implementation Project***

The State Department of Education administrator encouraged the Vacaville Unified School District to apply for the TN project. The district was interested in participating in the TN program because of Scholastic's reputation for producing quality school-based learning materials. In addition, the Board of Education and the district were interested in the well-being of the student population and were looking for avenues of support for the school food service. Team Nutrition was viewed as a way to increase the quality of food service as a whole.

The project was managed by the director of child nutrition and the deputy superintendent of instructional services. In addition to doubling as the Team Nutrition Coordinator (TNC), the director of child nutrition was responsible for changing menus, coordinating media and community events, communicating with the USDA, and analyzing the nutritional content of the menus. The deputy superintendent was responsible for ensuring that the curriculum was incorporated into the treatment school's curriculum and assisting in coordinating training and collecting evaluation data.

The director of child nutrition and the deputy superintendent of instructional services met with key stakeholders to discuss participating. On October 31, 1995, the district Board of Education received an outline of the program and voted unanimously in favor of applying. Following board approval, the TNC and deputy superintendent met with the principals to discuss the program and solicit volunteers.

### ***5.2.2 Planning for Project Implementation***

According to interviews with the management team, Vacaville Unified School District strongly supports considerable school autonomy in decision-making. This was illustrated during the planning process as organization for community activities and curriculum was centralized with the director of school nutrition; planning for classroom and school-based activities was decentralized to the treatment schools.

#### *Selecting and Recruiting the Schools*

The effort to recruit schools for the project began with the management team reviewing the criteria established by the USDA regarding school selection. They compared the criteria with

the characteristics of the schools in their district, taking into account potential budget issues, labor issues, location, cafeteria set-up, cafeteria management, and the relationship between the school and the district. In the end, the selected schools were willing to participate fully. Following final selection, the school principals were notified about the project by the TNC and the deputy superintendent.

The principals attended several meetings to discuss project expectations. Throughout the discussions, the management team impressed upon the schools that the project was a great opportunity and that their enthusiasm was a critical component of the project's success.

During preimplementation interviews, administrators were still uncertain who would have responsibility for coordinating and monitoring implementation of the classroom and school-wide activities. As the program moved to implementation, school administrators in each school assumed management responsibilities.

#### *Selecting Activities and Building Collaborative Relationships*

The final implementation plan submitted to the USDA on February 7, 1996, specified that the following major district-wide activities would be conducted during Phase I:

- A TN Fitness Run/Walk.
- Food Service Training.

One school planned the following activities:

- Chef Day.
- Chef Day/Book Giveaway.
- Parent/Community Open House.
- "Team Nutrition Takes to the Trail."
- Ice Cream Social Night.

The other school planned the following activities around the theme "A Pyramid of Possibilities":

- A series of parent contacts at parent/teacher committee meetings.
- Low-fat Pizza Tasting.
- Student Skit.
- Mini-Farmers Market.

The fitness run/walk was selected for several reasons: the TNC thought it would be a good idea for the whole community to link fitness to nutrition; one of the elementary school principals had organized a walk for funds in the past and wanted to repeat the effort; and it would get the community involved and raise money to purchase additional Scholastic module kits for other schools in the district.

The treatment schools differed in their planning of school-wide events. At one school, the principal and a planning committee developed a calendar of events to coincide with a reading program at the school entitled “Cooking up a Storm” and to convey messages consistent with the goals of Team Nutrition. At the other school, the TNC worked with the school contact to brainstorm on ideas and plan activities. The theme for the school was “A Pyramid of Possibilities”; however, due to the quick turnaround at the time of submission, the implementation plan lacked specific dates for activities.

The TNC utilized previously established relationships with various vendors and food brokers that operate within the California public schools for assisting in the planning and implementation of events. Both of the community partners interviewed were active members of the community and heavily involved in nutrition education programs at the State and local levels.

*Developing Relationships With the Implementation Schools*

The management team met frequently with the contacts at the elementary schools both in person and via telephone to plan for events and evaluation activities.

**5.3 THE TEAM NUTRITION IMPLEMENTATION SCHOOLS**

As shown in Table 5b, the primary demographic differences between the two treatment schools were enrollment size and the percentage of students qualifying for free and reduced-priced lunches. Callison Elementary has a somewhat larger population of students than Fairmont, with fewer receiving free/reduced meals.

**Table 5b. Team Nutrition Implementation Schools**

School	School Population	Percent of Student Population Minority	Percent Receiving Free/Reduced Meals	Type of Kitchen
Callison	809	27	13	Production
Fairmont	644	31	42	Production

The schools' cafeterias are onsite, self-contained, production kitchens capable of preparing limited scratch foods. Menus are coordinated by the district office. The students have a choice of fruits and vegetables but not an entree. In addition to the lunch program, snacks are available to supplement student lunches, produce additional revenue, and provide bag lunchers with milk. Other items include juice, popcorn, and fruit roll-ups.

The administrators' satisfaction with school lunch differed. One administrator was dissatisfied with the school lunch program because he believed the students should be provided more menu selection. The other administrator was satisfied with the overall program but also added that students needed more menu choices. Both administrators were pleased with the quality of the food service staff in their schools and the staff's ability to interact with the students.

In general, both administrators supported nutrition education in the schools because they felt it would help students make informed decisions about food choices now and in the future. One administrator was familiar with the Dairy Council's nutrition education program and felt that it offered good information for second and fifth grade students. He prefaced his support by noting the difficulty inherent in teaching good nutrition habits to students inundated by advertising and accustomed to the fast food habits of society.

The administrators' perceptions of their schools' recruitment into the project also differed. Although they discussed participating in the program together, one of the administrators felt uninvolved in the decision to be a TN school. He was informed about the project in a meeting memorandum and commented that information in the beginning was "very vague" and left him without a clear understanding of the evaluation.

Administrators described their role in the project similarly: both saw themselves as responsible for managing and coordinating activities with their teaching staff and viewed themselves as "complaint manager" for the food services department in the school. In addition, both discussed the project with the key stakeholders, including teachers, parents of fourth grade students, food service staff, and administrative staff. The basic purpose of the discussions was to impart information.

Based on past experience with new curricula-based initiatives, both administrators foresaw having to address certain issues regarding program implementation with their staffs. One administrator was concerned about the teachers' reactions to the extra workload but thought by discussing the benefits he could defuse any negative reactions to the program in advance. The other administrator was most concerned about the lack of advance planning affecting funding

for materials to implement the curricula. He did not think that the teachers' attitudes toward teaching nutrition would change. At the time, he had received no complaints but felt that the situation's status depended on feedback from the teacher training.

The administrators had little knowledge about the evaluation or what would be required of their schools for the evaluation. Additional information about the evaluation was provided to the principals during the initial project interviews.

#### **5.4 TEACHER TRAINING FOR IMPLEMENTING THE SCHOLASTIC MODULES**

##### **5.4.1 Description of the Vacaville Training**

Almost all of the teachers who implemented the classroom curricula participated in the training. A total of 22 teachers received the training. Scheduling the training was coordinated through the school administrators, the deputy superintendent of instructional services, the TNC, and the contractor. Teachers were provided advance notice of the date and provided general information on the content; they were not directly involved with scheduling or training content.

Notable challenges to scheduling teacher training in this district included ensuring the availability of enough substitutes to cover all of the teachers, scheduling the training room through the city, and getting access to the room. Training was scheduled during the school day, and substitute teachers were provided by the district.

##### **5.4.2 Teacher Evaluations and Perceptions of the Training**

**Table 5c. Teacher Opinions of Training for Implementing the Scholastic Modules**

<b>Percent of Teachers Agreeing That:</b>	<b>%</b>
The training was relevant to teaching the lessons.	61
The training was necessary for teaching the lessons.	17
The training improved their ability to teach the lessons.	17
N (number of teachers answering questionnaires)	(18)

The teachers were interested in the TN project and eager to receive the actual Scholastic modules (which were not available at the time of the first teacher training session). With respect to the content of the training, the teachers displayed an existing knowledge of nutrition issues. During the course of the first teacher training session, however, a few of the teachers

questioned the trainers about why certain foods were placed in particular parts of the Food Guide Pyramid and the usefulness of some of the information provided on Nutrition Facts food labels. The teachers particularly objected to the implication that, according to the pyramid, there were “no bad foods.” A frequently cited example was the inclusion of donuts in the grains group. As a result, the trainers spent extra time reemphasizing nutritional concepts. During the second teacher training session, even though a few teachers still disagreed with the placement of several high-fat foods (e.g., French fries) in the Food Guide Pyramid, they assured the trainers that they were teaching their students according to the information provided in the teacher training.

Teachers in all grade levels expressed some dissatisfaction with the teacher training (see Table 5c). Few teachers (17 percent) reported that the training was necessary for teaching the lessons or that it improved their ability to teach the lessons. In general, the teachers found the training condescending and too lecture oriented. As one participant commented, there was a “low expectation of participant’s knowledge and professional expertise.” The teachers suggested that future training should include more “hands-on” exercises and focus directly on the curriculum, not on teaching methods.

The teachers’ negative views of the training persisted throughout the semester and were voiced frequently during post-implementation interviews.

## **5.5 CLASSROOM IMPLEMENTATION OF THE SCHOLASTIC MODULES**

### **5.5.1 Teacher Opinions of Nutrition Education**

Their views on the training notwithstanding, every teacher indicated an interest in teaching nutrition. Almost all (95 percent) of the teachers indicated that the classroom is an appropriate place to teach nutrition and that they want to incorporate nutrition activities into their classrooms (see Table 5d). Most said that they try to influence the food choices their students make (86 percent) and that their students like nutrition as well as other subjects (81 percent). A somewhat smaller number (70 percent) actually planned to incorporate nutrition more often into their classroom activities.

**Table 5d. Teacher Motivation Prior to Implementation (Pretest Percentages)**

<b>Motivational Items</b>	<b>%</b>
Percent indicating interest in teaching nutrition	100
Percent indicating desire to incorporate nutrition activities into their classrooms	95
Percent indicating that students like nutrition subjects as well as other subjects	81
Percent indicating that they try to influence the food choices their students make outside of school	86
Percent indicating that they plan to incorporate nutrition more often into their classroom activities	70
Percent indicating that the classroom is an appropriate place to teach students about nutrition	95
N (number of teachers completing questionnaires)	(21)

As shown in Table 5e, most of the teachers recognize the benefits of teaching nutrition. Almost all (95 percent) of the teachers said good nutrition can positively affect class performance, while 80 percent thought nutrition education would actually help children choose healthier foods. Eighty-nine percent said nutrition lessons could also reinforce other subjects they teach.

**Table 5e. Percent of Teachers Agreeing With Statements Regarding the Benefits of Nutrition Education (Pretest Percentages)**

<b>Potential Benefits of Nutrition Education</b>	<b>%</b>
Nutrition education in the classroom will help children choose healthier foods to eat.	80
Teaching nutrition will help reinforce other subjects that they teach.	89
Good nutrition can positively affect students' class performances.	95

### **5.5.2 Adherence to Curriculum**

As described in Chapter 1, the Scholastic kits are composed of nine lessons for Module 1 (Pre K - K) and eight lessons each for Modules 2 (Grades 1-2) and 3 (Grades 3-5). During teacher training for the pilot, Module 1 teachers were told they should complete at least eight of the nine lessons and that they should conduct three activities per week, with no explicit instructions as to which activities. The teachers for Modules 2 and 3 were instructed to teach all eight lessons, complete the Getting Started session and each of the activities included in the lesson, complete the Lunchroom Link for at least four of the lessons, and use the student and parent reproducibles as directed in the Scholastic lessons. Adherence to the curricula was measured

by the number of times the teachers reported (through activity logs) completing the recommended lessons, activities, and Lunchroom Links, as well as the degree to which they used the materials as directed. Because there were no explicit activities required for Module 1, the data on activities and materials are not used in measuring adherence for this module.

As shown in Table 5f, the teachers in California were less than fully compliant in teaching the Scholastic lessons. The kindergarten teachers reported teaching, on average, 6.3 of the 8 required lessons in Module 1, while the second and fourth grade teachers reported teaching 5 and 5.6 of the 8 lessons in Modules 2 and 3, respectively. The average duration of the lessons that were taught was 1.28 hours for Module 1, 2.49 hours for Module 2, and 2.34 hours for Module 3. The average cumulative duration of the Scholastic lessons for Module 1 was approximately 8 hours, while the second and fourth grade students were exposed to an average of 12 to 13 hours of the Scholastic lessons.

**Table 5f. Classroom Implementation of Scholastic Module**

	<b>Module 1 (Kindergarten)</b>	<b>Module 2 (Grade 2)</b>	<b>Module 3 (Grade 4)</b>	<b>All Modules</b>
# of Scholastic Lessons (Per Module)	9	8	8	25
Avg. # of Lessons Taught <sup>1</sup>	6.3	5	5.6	5.58
Avg. Duration Per Lesson Taught (Hrs) <sup>2</sup>	1.28	2.49	2.34	2.04
Avg. Planning Time (Per Lesson Taught (Hrs) <sup>2</sup>	1.41	1.01	1.65	1.38
Cumulative Duration Per Class (Hrs) <sup>1</sup>	8.05	12.45	13.00	11.37

<sup>1</sup> Averages reflect cumulative totals divided by the number of teachers/sections.

<sup>2</sup> Averages reflect cumulative totals divided by the number of lessons taught in each module.

**Table 5g. Average Number of Times Activities Were Conducted Per Class**

Lesson	Module 2 (Grade 2)		Module 3 (Grade 4)	
	Recommended/ Available	Conducted	Recommended/ Available	Conducted
Getting Started	8	2.6	8	3.6
Activity 1	8	4.3	8	5.1
Activity 2	8	4.8	8	4.8
Activity 3	2	0.8	2	1.0
Lunchroom Link	4	1.6	4	1.6
Home Connection	7	1.5	6	2.7
Exercise Connection	0	0	1	0.4
Wrap It Up	8	2.6	8	1.8
Taking It Further	8	1.1	8	1.3

As a consequence of the teachers not being fully compliant in teaching the lessons, teachers appear to be not fully compliant in presenting the various components of the lessons (Table 5g). Teachers completed approximately six of the eight lessons and appear to have conducted roughly one-half of the recommended activities. Similarly, the materials recommended for use with the Scholastic lessons were typically used as recommended approximately one-half of the time (Table 5h).

**Table 5h. Average Number of Times Materials Were Used Per Class**

Material	Module 2 (Grade 2)		Module 3 (Grade 4)	
	Recommended	Used	Recommended	Used
Parent Information Sheets (reproducibles)	7	4.3	7	3.7
Student Information Sheets (reproducibles)	8	3.9	7	4.7
Student Magazine	2	1.6	6	3.0
Video	4	1.8	5	1.8

Based on teacher interviews, only one of the nine fourth grade teachers in the treatment schools reported completing all eight of the lessons. The major reason for not completing all of

the lessons was that they took too long to complete. Two of the teachers commented that because each activity took at least 1 hour to complete (making each lesson at least 4 hours long), it would be very difficult to complete all eight within the allotted 8-week timeframe. The criteria used to select which activities to complete were appropriateness for students, length of time to complete, and ease of accomplishing.

The fourth grade teachers presented the lessons similarly but perceived their teaching responsibilities differently. A majority of the fourth grade teachers in the treatment schools taught the TN curriculum as a separate curriculum. Three of the nine fourth grade teachers interviewed taught the lessons as part of either the health education, language arts, or science curriculum. When asked whether the school or district prescribed the lesson activities that the teachers were to conduct, their responses varied. One teacher said the district asked that each teacher go through the whole curriculum, but two teachers said the district did not dictate anything. In fact, the USDA instructed the district to have teachers complete all eight lessons during the time period. This misunderstanding may explain why the teachers did not complete the lessons as directed.

In general, the teachers were dissatisfied or noncommittal regarding the time it took to implement the classroom materials. Only one-third of all of the teachers implementing the lessons agreed that the time to plan or implement the lessons was reasonable (see Table 5i). They commented that the main drawback of the materials was the preparation time involved for the lessons, including the time it took to gather all the necessary materials. During this semester, the TNC assisted in organizing the gathering of materials, but it was unclear whether the assistance would be available beyond the pilot. One teacher said that the materials were new to them and familiarizing themselves with the lessons took extra amounts of time.

**Table 5i. Teacher Attitudes Toward Scholastic Materials**

<b>Teachers Who Reported That They Were Satisfied With Scholastic Materials</b>	<b>44%</b>
<b>Percent of Teachers Who Agree or Strongly Agree That:</b>	<b>%</b>
The Scholastic materials were appropriate for the developmental level of the students in my class.	89
The Scholastic materials were appropriate for the educational levels of the students in my class.	89
The Scholastic materials were culturally appropriate for the students in my class.	94
The time required to prepare to teach the Scholastic lessons was reasonable (considering that they were new to me).	33
The time required to teach the Scholastic lessons was reasonable.	39
The content of the Scholastic materials did provide sufficient background for my nutrition-related teaching needs.	61
The classroom activities met my nutrition-related teaching needs.	67
The activities suggested in the Scholastic materials were appropriate for my classroom.	61
Having the Scholastic materials makes it easy to teach about nutrition.	44
I will teach more about good nutrition in the future if I can use the Scholastic materials again.	53
The Scholastic materials are better than other nutrition teaching materials I have used.	33
N (number of teachers completing questionnaires)	(18)

### **5.5.3 Teacher Attitudes Toward Scholastic Curriculum**

As shown in Table 5i, less than one-half (44 percent) of the teachers expressed satisfaction with the Scholastic materials overall. Their responses to a series of more specific questions helped define the context of this dissatisfaction. Most teachers agreed that the materials were appropriate for the developmental (89 percent), educational (89 percent), and cultural (94 percent) backgrounds of their students. However, few thought that the time for preparing (33

A majority of the fourth grade teachers commented that the materials contained good ideas and they would recommend that other teachers participate. They prefaced their recommendations by saying that teachers need to be given enough lead time for planning and enough support for the food preparation.

The fourth grade teachers agreed that the Scholastic materials engaged the students' interest, and that their own enthusiasm sparked that of the students. The lessons were deemed appropriate for fourth graders and adaptable for other grades as well. It was mentioned that it would probably be easier to tailor the lessons for the fifth grade rather than the third grade.

Lessons that involved reading food labels, weighing and measuring, and art projects were most enjoyable or most able to engage student interest. One teacher commented that she liked the Lunchroom Links because they provided a positive dialogue and promoted teamwork. The lessons that were less well received involved food tasting. The teachers felt that the lessons required them to do a lot of grocery shopping for food the children wasted. Therefore, the activity was neither efficient nor cost-effective.

Some of the teachers preferred other existing nutrition materials to the Scholastic materials. The teachers rated the California State Dairy Council materials on a par with or a little better than the TN materials, primarily because the Dairy Council materials required less time commitment. The Dairy Council materials were not as complicated and the lessons "short and sweet" (about an hour of preparation time). One teacher had used a program entitled "Smile and Style" that dealt with dental hygiene and nutrition. She preferred the program to Team Nutrition because it had a straightforward focus and emphasized the food pyramid.

These teachers would advise other teachers planning to implement these activities to go through all the materials beforehand and adapt and mold the activities to their students and their own personal teaching style, keeping in mind the allotted amount of time.

The district's management team felt that the teachers did the best job they could implementing the curriculum but that the Scholastic modules emphasized "hands-on" activities that required a great deal of time and volunteer assistance to implement.

During the second site visit interview at the second school, the interviewer and the management team spent a considerable amount of time discussing the district's philosophy on integrating new curriculum into the schools. Vacaville strongly supports a cooperative, consensus-building approach. Typically, teachers are actively involved in discussions regarding new curricula. This method ensures positive participation and "buy-in." The timeline for Team

Nutrition did not allow a great deal of time for consensus building, and as a result, the program was not received as positively in either school as it might have been. In addition, the district was in the process of implementing a new math curriculum that required a great deal of teacher time. It was felt that these issues could have contributed to the level of teacher dissatisfaction with the Scholastic materials and Team Nutrition.

#### **5.5.4 Changes in Teacher Behaviors**

In general, the teachers reported being much more aware of the implications involved in using food as an incentive or reward in the classroom, though some said they were not sure they would change those habits. They think about their actions, but said it was easier and cheaper to reward with candy than with more nutritious foods. The teachers also were more aware of themselves as models for their students and would try to think about their actions more often.

#### **5.5.5 Involvement of Cafeteria Staff**

When asked to describe their involvement in the TN project, school food service staff typically responded that they were “a little bit” or “somewhat involved.” The nature involvement encompassed providing tours of the cafeteria, preparing foods for classroom activities, and monitoring the newly introduced garden choices bar.

Food service staff at both implementation schools commented that the additional workload generated by the addition of the garden choices bar and food tastings for classroom activities was challenging. However, both felt that a combination of responsive staff in the district food service office and a team approach to task completion contributed significantly to the successful implementation of the activities.

### **5.6 IMPLEMENTATION OF SCHOOL-BASED CORE ACTIVITIES**

The TNC reported that the activities conducted differed from those described in their implementation plan because the teachers took the initiative (provided by the incomplete nature of the implementation plan) to creatively incorporate activities into other school activities. Reiterating a theme discussed previously, the TNC felt that it was important to allow the schools to adjust the activities to fit into the individual school setting. Forcing schools to adhere to the implementation plan would “deflate enthusiasm and decrease creativity.” To better understand the diversity of activities conducted in each school, a timeline of the activities is provided in Figure 5a.

# Figure 5a: Vacaville, California

## Legend

- S** School Event
- D** District-Wide Event
- M** Media Event
- F** Food Service Training

5-15

**S** Broccoli Pizza Tasting  
CALLIBON 28-MAR-96

**S** Cooking Up a Storm with Reading -  
Health Dips  
FAIRMONT 15-MAR-96

**M** School Newsletter  
IMPLEMENTATION SCHOOLS 8-MAR-96

**F** "Nutrition 101" Course  
SELECT STAFF BEGAN 26-FEB-96

**F** Field Trip to Manteca School District  
DISTRICT WIDE 23-FEB-96

**F** Manager Training  
DISTRICT WIDE 13-FEB-96

**S** Cooking Up a Storm with Reading -  
Health Fruits  
FAIRMONT 19-APR-96

**F** Get Ready, Get Set, Go for Change  
DISTRICT WIDE 17-APR-96

**M** School Newsletter  
IMPLEMENTATION SCHOOLS 4-APR-96

**F** Staff Development Day  
DISTRICT WIDE 3-APR-96

**S** "Garden Food Bar" Assembly  
IMPLEMENTATION SCHOOLS 1, 26-APR-96

**F** "Nutrition 101" Course (cont.)  
SELECT STAFF APR-96

**D M** Olympic Celebration  
DISTRICT WIDE 30-MAY-96

**S** Lunch w/Grandparents  
CALLIBON 24-MAY-96

**S M** Cooking Up a Storm with Reading -  
Chef Activity  
FAIRMONT 23-MAY-96

**S M** Team Nutrition Lunch  
and Olympic Torch Passing  
IMPLEMENTATION SCHOOLS 22-MAY-96

**S** Ice Cream Social w/Parents  
FAIRMONT 14-MAY-96

**M** School Newsletter  
IMPLEMENTATION SCHOOLS 10-MAY-96

**S** Team Nutrition on the Trail  
FAIRMONT 7-MAY-96

**S** Family Open House  
FAIRMONT 19-MAY-96

**S** Grains and Greens  
CALLIBON 1-MAY-96

**F** "Nutrition 101" Course (cont.)  
SELECT STAFF MAY-96

**February/March**

**April**

**May/June**

### **5.6.1 Fairmont Elementary**

Where feasible, Fairmont connected all of its activities to an ongoing reading program within the school. The school had an enthusiastic volunteer parent network and used a steering committee to plan its TN activities. The activities included:

- **Team Nutrition on the Trail.** Students participated in a reading in the park at a neighborhood park dedication. Afterwards, students prepared a healthy trail mix snack.
- **Team Nutrition Ice Cream Social.** Parents were invited to the school when students discussed and sampled healthy topping alternatives.
- **Cooking Up a Storm With Reading.** For this activity, the principal organized three separate events to encourage healthy food choices. The first was entitled “Health Dips” and provided the students with various healthy snacks that they would then rate. The second was entitled “Health Fruits,” and, with the help of a parent chef, the students made waffle cones with ice cream and fresh fruit toppings. For the third, students pledged to read for a certain amount of minutes during the school year. If they met their quota, the principal and vice principal vowed to eat anything the students asked. As promised, a local chef sautéed squid and snails and discussed preparation techniques.
- **Chef Events.** Every Friday, the principal or a parent would act as a guest chef and provide a demonstration for the students of various healthy meal choices.
- **Torch Passing.** In connection with the district-wide community event (described later in the chapter), an Olympic torch was passed between students of Fairmont Elementary to another local elementary school. The event promoted the importance of physical fitness and increased awareness of Team Nutrition and its mission and goals.

### **5.6.2 Callison Elementary**

The activities in Callison were planned primarily by the TNC with the assistance of the vice principal and included:

- **Pizza Tasting.** A community partner sponsored a broccoli pizza tasting for fourth graders. A chef described the ingredients designed to lower fat and increase fiber.
- **Torch Passing.** In connection with the district-wide community event (described later in the chapter), an Olympic torch was passed between students of Callison Elementary to another local elementary school. The event promoted the importance of physical fitness and increased awareness of Team Nutrition and its mission and goals.

- **Chef Event.** A local food sales organization sponsored a chef to come to the school for a “Grains and Greens” event. The chef, with the assistance of the fourth grade class, prepared three grain dishes that the students sampled and rated.

### **5.6.3 Garden Choices Bar**

The opening of the garden choices bar in each of the treatment schools was the most frequently mentioned and highly lauded activity conducted in this district. It was hoped that the garden bars would assist the students in making healthier menu choices. To coincide with the opening of the bar, each school hosted an open house. The event was designed to promote Team Nutrition to the parents invited to attend lunch. In addition, students in each of the schools had an assembly for the opening of the bar that included decorating the cafeteria with TN materials and balloons and discussing healthy food choices. A few weeks later, the grandparents of the students at one of the schools were also invited to attend lunch.

Every teacher remarked how effectively the school-wide chef’s taste-testing party reinforced the lessons’ messages. The teachers mentioned how much the kids enjoyed tasting all the new and low-fat foods and how engaging the chef was. At one of the schools, the teachers indicated that they often provided educational “tie-ins” for the school-wide activities to reinforce the classroom lessons’ messages.

### **5.6.4 Family Open House**

The Family Open House was held at each of the implementation schools to make contact with the students’ parents. A brief discussion of the TN modules was held, giving parents the opportunity to ask questions about the project. Various TN literature and materials were provided, along with recipes and photos. The event was intended to inform parents about Team Nutrition and to emphasize the importance of healthy food choices.

## **5.7 FOOD SERVICE ACTIVITIES AND CHANGES**

### **5.7.1 Plans for Meeting Dietary Guidelines**

The addition of garden choices bars in the treatment schools was the major food service change. At first, the managers were apprehensive about the change and the additional work required. However, once the implementation was complete, cafeteria workers embraced the change. Most importantly, according to staff, the children “love it.” Teachers in both treatment schools said their class’ participation in school lunch had increased dramatically.

Other food preparation changes included not frying foods, decreasing the use of butter and mayonnaise, and using low-fat salad dressing. The cafeteria manager at one school also tried to change the salad bar a bit each day to give the students a little variety.

From the start, the TNC felt that one of the principal benefits of Team Nutrition would be the focus on meeting the Dietary Guidelines. While the TNC felt that their current menus were close to meeting the Guidelines, involvement in the program would provide the stimulus for making additional menu changes and providing food service staff inservice training on meeting the Guidelines. Food service activities and training conducted throughout the initial implementation period were consistent with the TNC's initial impressions.

### **5.7.2 Observations of Food Preparation**

Observations of food preparation were conducted at both the beginning and the end of the implementation period. Initially, co-observers noted that the staff did not discuss the quality, taste, or healthfulness of the foods but did discuss the children's food preferences. After the TN classroom implementation ended for the semester, the observers noted that one school's food service staff discussed the quality and taste of the food and commented that the students were making better food choices.

### **5.7.3 Food Service Staff Training**

A major focus of implementation activities was on food service staff training. During the initial phase of implementation, several major training sessions were conducted. An early training session covered an explanation of the Scholastic modules and the cafeteria's role in the project. Other activities included a "Nutrition 101" course that the TNC coordinated with a local community college in which eight food service employees were enrolled; a staff development day for all managers in the district to review their role in the TN Olympic celebration; a teleconference entitled "Get Ready, Get Set, Go for Change" covering menu changes and USDA guidelines that the Fairmont employees attended; and a trip to the Culinary Institute of America (CIA) training for treatment school cafeteria managers. The hours devoted to food service training far exceeded the 10 hours that the USDA required of pilot communities.

In the CIA training, managers discussed methods for reducing fat, increasing fiber without decreasing calories, blanching fresh vegetables, and changing recipes to meet dietary guidelines. In addition, cafeteria managers in the treatment schools took a "field trip" to an elementary school in a neighboring school district to observe the operation of a garden choices

bar. The child nutrition director also participated in several individual training sessions sponsored by USDA and the California SHAPE program.

## **5.8 COMMUNITY ACTIVITY**

This district sponsored an Olympic celebration activity to coincide with the excitement generated by international Olympic events. For this activity, a TN training meal was provided to students in all of the schools participating in the event, and TN Time Capsule entries were displayed.

Although the kids loved the district-wide event, the teachers did not feel this reinforced the lessons' messages. They felt there was little connection made between the event and Team Nutrition.

## **5.9 COMMUNITY PARTNERS**

Throughout the spring term, the TNC and deputy superintendent for instructional services worked at recruiting community partners for Team Nutrition. The TNC remarked that establishing community partners was one of the more challenging aspects of the program; however, she did receive a great deal of support from two of the school district's food vendors. One of the vendors was responsible for conducting the pizza tasting and Grains and Greens event. The other was instrumental in installing the Garden Choices bar and provided food gifts for the district-wide event.

Also, for both of the implementation schools, Team Nutrition was featured three times in their weekly news bulletin to parents. Students had the opportunity to write about the things they were learning about nutrition and teachers wrote about the modules and the classes' planned activities.

The partners were very enthusiastic about the project. In interviews conducted during the second site visit, each commented that they were involved with other nutrition education programs within the State and the district. One of the partners worked with the 5 A Day program at the State level. Each considered promotional activities such as food tasting a normal business activity. Though they were unable to conduct tasting on a district-wide scale, they were very willing to participate in activities when asked.

## **5.10 MEDIA EVENTS AND MEDIA COVERAGE**

The TNC and the deputy superintendent attempted to link media to each school-wide and community-wide event they conducted. Although they felt that communicating with the media was a challenge, they managed to attract the attention of local newspapers. The deputy superintendent found communicating with the media electronically to be the most effective and timely method of reaching media contacts and maintaining steady communication and interest.

Additionally, for both of the implementation schools, Team Nutrition was featured three times in their weekly news bulletin to parents. Students had the opportunity to write about the things they were learning about nutrition, and teachers wrote about the modules and the classes' planned activities.

USDA-disseminated Disney PSAs using the characters from "The Lion King" to talk about good nutrition represented another effort to get the TN message out through the media. This was apparently successful in reaching the students; 89 percent of the fourth grade students surveyed recalled seeing the Disney characters Pumba and Timon talk about good nutrition on television (63 percent recalled it many times and 25 percent at least once).

## **5.11 PARENT INVOLVEMENT**

### ***5.11.1 Parent Awareness of Team Nutrition***

Parents of the TN students were potentially involved through the media, through school-wide and community-wide activities, and through take-home materials from the Scholastic modules. The telephone interviews with fourth grade parents assessed the degree of these various types of involvement.

**Table 5j. Parent Awareness of Team Nutrition**

<b>Percent of Fourth Grade Parents Reporting They:</b>	<b>%</b>
Heard of Team Nutrition through any media (Net).	43
Heard of Team Nutrition on the television.	13
Heard of Team Nutrition on the radio.	10
Heard of Team Nutrition in the newspaper.	36
Heard of any TN event (Net).	92
Were aware of a TN community event.	37
Were aware of a TN classroom event.	88
Were aware of a TN school-wide event (outside of classroom).	73
Participated in a TN activity.	18
N (number of parents completing questionnaires).	(143)

As shown in Table 5j, 43 percent of the parents of the fourth grade students had heard about Team Nutrition through the newspaper (36 percent), television (13 percent), or radio (10 percent). Almost all (92 percent) were aware of either a TN classroom (88 percent), school-wide (73 percent), or community (37 percent) event. Only 18 percent, however, had actually participated in a TN event.

### **5.11.2 Nutrition Education Activities in the Home**

Most (73 percent) of the fourth grade parents surveyed did report participation in some nutrition activity in the home (Table 5k), including family nutrition projects (38 percent), other nutrition projects (47 percent), and family reading materials (42 percent).

**Table 5k. Percent of Fourth Grade Parents Reporting Participation in Nutrition Activities in the Home**

<b>Home Activities</b>	<b>%</b>
Conducted any home activities	73
Family Nutrition Projects	38
Other Nutrition Homework	47
Family Reading Materials	42
Other Activities	16
N (number of parents completing questionnaires)	(143)

Seventy percent of the fourth grade parents reported having completed at least one of the eight TN parent information sheets (reproducibles), with an average of three of the sheets completed

(Table 5l). Many fewer parents (12 percent) reported receiving the Scholastic parent newsletter, "Foodworks," or seeing the children's magazine (23 percent), and only 10 percent said they spent any time with the child using these items.

**Table 5l. Parent Use of Take Home Team Nutrition Materials**

Percent completing any of eight parent information sheets (reproducibles)	70%
Mean number of parent information sheets (reproducibles) used	(3.1)
Percent receiving a copy of "Take Out," TN newsletter for parents	12%
Percent whose child received "Foodworks," TN children's magazine	23%
Percent spending time with child using "Take Out," or "Foodworks"	10%
N (number of parents completing questionnaires)	(143)

As shown in Table 5m, parents expressed quite positive opinions regarding the parent information sheets (reproducibles). They were least positive about the time required to complete them. The few parents who were aware of the Scholastic parent newsletter "Foodworks" were unanimous in finding it useful and understandable.

**Table 5m. Parent Opinions of Take Home Team Nutrition Materials**

<b>Percent of Parents Agreeing or Agreeing Strongly That:</b>	<b>%</b>
Parent information sheets (reproducibles) were interesting to child.	90
There was enough time to complete parent information sheet (reproducibles) activities.	61
The parent information sheets (reproducibles) were important to the child.	77
The child had fun doing parent information sheets (reproducibles).	84
The parent was able to understand information sheets (reproducibles).	97
The sheets gave the parent other ideas to practice good nutrition.	93
<b>Percent of parents who liked all or most of the parent information sheets (reproducibles).</b>	<b>81</b>
N (number of parents completing questionnaires and using parent information sheets (reproducibles).	(100)
<b>Percent of Parents Agreeing or Agreeing Strongly That</b>	
"Take Out" provided useful information.	100
The parent could understand information in "Take Out."	100
N (number of parents completing questionnaires and receiving "Take Out").	(17)

## 5.12 LESSONS LEARNED IN VACAVILLE

- **Recognize the importance of understanding and responding to the “corporate culture” of the schools and community.** The need for autonomous decision-making on the part of the schools is an important element to consider when examining teacher responses and satisfaction with the TN program. It is believed that the teachers’ satisfaction with the project would have been greater had they felt more involved in all phases of the program and been given more autonomy in implementing the Scholastic curricula and associated activities. The tight timeframe imposed by the project made it difficult to involve school teachers and staff in the initial planning, but that should only be a single occurrence.
- **Develop more direct communication with teachers.** In this community, communication generally flowed from the district office to principals. The absence of more direct conversation between project coordinators and teachers appears to have contributed to some misunderstandings that may have otherwise been avoided. For example, teachers at one school expressed some anger when they learned district support they believed forthcoming was not in fact promised.
- **Implement incrementally.** As discussed earlier, Team Nutrition consists of two interrelated initiatives—multifaceted nutrition education and training and technical assistance. Based on staff and resource availability, districts may need to implement the program incrementally. During the first phase of implementation, Vacaville appears to have focused on making food service changes and training food service staff while other pilot communities focused on \_

**CHAPTER 6: ADDITIONAL TEAM NUTRITION IMPLEMENTATION SITES  
(LAWRENCE, PASSAIC, CLEVELAND)**

## 6.1 SETTING THE STAGE: ADDITIONAL TEAM NUTRITION IMPLEMENTATION SITES

The pilot implementation of the Team Nutrition (TN) project also included the public school districts of Lawrence, MA; Passaic, NJ; and Cleveland, OH. These sites were expected to implement the TN project fully, but due to budget constraints were not included in the intensive process evaluation. However, a variety of data were collected for the process evaluation. As described in Chapter 1, the data included:

- Teacher activity logs.
- Core activity logs.
- Teacher pre- and post-test questionnaires.
- Regular telephone calls with the TNCs.
- A one-on-one telephone interview with the TNC (identical to the second site visit interview conducted in the implementation sites).
- The pilot community's quarterly progress reports.
- The site implementation plans.

Thus, while the information contained in this chapter is not as comprehensive as that found in the case studies for the other four communities, it nonetheless draws on several data sources and provides a general picture of the implementation in these three communities.

**Table 6a. Additional Team Nutrition Implementation sites**

DISTRICT	Elementary School Population	Number of Elementary Schools	Percent of Elementary School Student Population Composed of Minorities	Percent of Elementary School Students Receiving Free/Reduced Meals	Existing Nutrition Education Curricula in the District	Food Service Staff Trained in Dietary Guidelines
Lawrence, MA	8,500	15	82	84	Yes	No
Passaic, NJ	5,700	11	96	85	No	No
Cleveland, OH	40,000	79	80 *	75	Yes	No

\* African Americans only

Table 6a contains information on the demographics and status of nutrition education and food service training in these communities prior to the introduction of Team Nutrition. Information in this table was drawn from applications submitted to USDA by school districts interested in becoming pilot communities and is useful to understanding the environment into which Team Nutrition was introduced.

All three communities are located in industrial areas. As shown in Table 6a, each school had a high percentage of minority students, and a large portion of the elementary school population received free or reduced-priced meals. The largest minority population in Lawrence and Passaic was Hispanic; in Cleveland, the largest minority population was African American.

The sites differed with respect to the extent of nutrition education being taught in the schools prior to implementing Team Nutrition. The schools in Lawrence taught a nutrition education component in their health curriculum (the Great Body Shop curriculum) for grades K-5, and in the 1994-95 school year, they participated in a program similar to Team Nutrition called Healthy Choices that was offered by the Massachusetts Department of Public Health. The Cleveland site also offered nutrition education as part of its health curriculum, but the TNCs described the extent of the nutrition information as “not very much.”

In Passaic, no formal nutrition education was offered as part of the elementary school curriculum. However, in the past, the district provided students with a Fat Finder Workshop offered by Beth Israel Hospital’s Health First Program. Over 1,800 students in grades K-6 participated in this program during the 1994-95 school year. Some nutrition education was provided to elementary school students by the Dairy Council, but the TNC did not have details on the implementation of this program.

None of the communities reported training district or school food service workers to implement the dietary guidelines during the last 2 years.

## **6.2 PLANNING FOR TEAM NUTRITION**

### ***6.2.1 Applying for the USDA Team Nutrition Pilot Implementation Project***

In Lawrence, Massachusetts, with the support of the school system’s health and nursing services supervisor and the assistant superintendent of Lawrence Public Schools, the food services director initiated the effort to apply for a grant. The idea was presented to the health

advisory council—an independent group that advises the school board on health issues—which approved the project and passed it on to the Board of Education for final approval.

According to the Lawrence TNC, the district decided to apply for the project because the objectives of Team Nutrition were consistent with the school system's philosophy that food service, nutrition education, and health services should work collaboratively within the district to meet the nutrition needs of students and their families. However, the TNC noted that the Lawrence School District's participation was predicated on the understanding that materials would be available in Spanish for teachers of bilingual classes and for parents.

The regional USDA office directly recruited the Passaic site to represent the mid-Atlantic. After the assistant superintendent of schools in Passaic, the district food services supervisor, and staff from the regional office determined that the project would benefit the students in Passaic schools, they met with their school board's food services committee, which approved the project and presented it to the Board of Education for final approval.

It was believed that the project would further the district's efforts to educate students and parents about nutrition, provide children with more nutritious meals, and promote community involvement in nutrition education. Also, it was hoped that participation in the project would expedite the district's desire to analyze the nutrition content of the menus and provide food service staff training in implementing the Dietary Guidelines.

The USDA's Midwest regional office recruited Cleveland through the Ohio State Department of Education. In late October, a discussion between a representative of the State Board of Education, the superintendent of Cleveland Public Schools, the director of food services of the Cleveland School System, the director of general education in charge of curriculum, and the two individuals who would be responsible for implementing Team Nutrition made the decision to apply. They felt that the project not only would satisfy the school district's existing nutrition education objectives, but also would greatly expand the level of nutrition education in the schools and improve the relationship between school food service staff and academic personnel.

### **6.2.2 *Planning for Project Implementation***

The Cleveland site's later introduction to the project meant that the district experienced extra pressure to draft and revise its TN implementation plan on schedule. Even though the regional office sent someone to assist with the plan's development, the TNCs described developing the

implementation plan as “very stressful” because it added work to their already existing workload.

Project management varied across the communities:

- In Lawrence, the position of TNC was assigned to the school district’s health and nursing services supervisor. The food services director and the health education staff supported her management and coordination efforts. The TNC’s responsibilities included working with the health education staff, the principals, the teachers, and the food services supervisor to ensure that the project achieved its objectives. The food services director was responsible for menu revisions and training of food services staff. Health education staff served as the primary school contacts and coordinated implementation of the classroom curriculum.
- In Passaic, the Passaic Board of Education district food service supervisor served as the TNC. He was responsible for managing and coordinating the project and serving as the liaison between community groups and organizations. The vice principals in the implementation schools served as the school contacts.
- In Cleveland, the manager of nutrition services and the curriculum supervisor for the Cleveland Public Schools shared the role of TNC. They noted that having the project jointly coordinated by food services and the curriculum department enhanced communication with the schools and provided a model for food service and academic staff to work together. The principals of the implementation schools served as the school contacts.

### *Selecting and Recruiting the Schools*

In Lawrence and Cleveland, the TNCs selected the schools and then contacted the principals to ascertain their interest in participating. In both of these sites, the TNCs indicated that even though all of the principals contacted initially expressed interest in the project, their participation was not entirely voluntary. The Passaic TNC presented the TN project to the school principals during a monthly administrative meeting. In Cleveland, the schools were selected on the basis of their geographic location and onsite kitchen cafeteria facilities. The TNCs submitted the names of the selected schools to the assistant superintendent, who then communicated the selection to the school principals.

### 6.3 THE TEAM NUTRITION IMPLEMENTATION SCHOOLS

**Table 6b. Team Nutrition Implementation Schools at a Glance**

District	Population of Participating Schools	Percent of Student Population Minority	Percent Receiving Free/Reduced Meals	Type of Kitchen
Lawrence	1,079	86.7	88.0	Base and Combination
Passaic	1,702	82.6	82.5	Base and Satellite
Cleveland	1,125	80.0	63.0	Combination

As shown in Table 6b, implementation schools in the process communities were similar regarding ethnic breakdown, but Cleveland had a much lower percentage of students receiving free or reduced-priced meals than did Lawrence and Passaic. The TNCs described the implementation schools as follows:

- In Lawrence, the project was implemented in three schools: two of the schools were K-5 and one was K-8. Although the initial plan was to implement Team Nutrition in kindergarten, second grade, and fifth grade, it was implemented in only the fifth grade during Phase I.
- In Passaic, the TNC reported one of the selected schools was an official community involvement school that regularly held community functions. The other school had a very active parent group and enthusiastic teachers. The Scholastic modules were implemented in kindergarten, first grade, and fifth grade.
- In Cleveland, both schools, though different in size, had staffs that worked well together. Both schools had onsite kitchens, which were found in only 4 of the 80 schools in the district. The Scholastic curriculum was implemented in kindergarten, first grade, and third grade.

## 6.4 TEACHER TRAINING FOR IMPLEMENTING THE SCHOLASTIC MODULES

### 6.4.1 Description of the Team Nutrition Implementation Site Training

#### *Lawrence*

As in all implementation sites, two teacher training sessions were conducted in the Lawrence district. A total of 16 teachers were trained. Both training sessions were conducted on a Saturday to avoid hiring substitutes.

#### *Passaic*

For each training wave, two separate sessions were held. The first day of each session was reserved for the first grade teachers (9 attendants), while the second day consisted of all the kindergarten and fifth grade teachers (12). For both training sessions, teachers were given a full day off and substitutes were hired to cover their classes.

#### *Cleveland*

A total of 33 teachers received training. Training sessions were held after the school day.

### 6.4.2 Teacher Evaluations and Perceptions of the Trainings

**Table 6c. Teacher Opinions of Training for Implementing the Scholastic Modules**

<b>Percent of Teachers Agreeing That:</b>	<b>Lawrence (%)</b>	<b>Passaic (%)</b>	<b>Cleveland (%)</b>
The training was relevant to teaching the lessons.	100	89	100
The training was necessary for teaching the lessons.	67	44	63
The training improved your ability to teach the lessons.	67	60	91
N (number of teachers completing questionnaires)	(6)	(10)	(11)

Data from the post-implementation teacher surveys reveal that almost all of the teachers in the process-only communities found the training relevant to teaching the lessons (Table 6c). Somewhat fewer thought the training was necessary for teaching the lessons and that it

improved one's ability to teach the lessons. Note that these percentages are based on very small numbers of teachers completing the survey.

Teachers in the process communities were not interviewed in site visits. However, when asked about feedback they had received from the teachers, the TNCs said:

- The training was “very well received and went very well.” Teachers said that they had been well prepared by the training and “knew the materials.” At this site, the area food service supervisors also attended the training in order to support cafeteria staff.
- The teachers at one site suggested that holding the training in the beginning of the year and adding more discussion about the different ways to implement lessons would improve the training.

## 6.5 CLASSROOM IMPLEMENTATION OF THE SCHOLASTIC MODULE

### 6.5.1 *Teacher Opinions of Nutrition Education*

Tables 6d and 6e present data on the teachers' pre-implementation motivation and attitudes toward teaching nutrition in their classrooms.

**Table 6d. Teacher Motivation Prior to Implementation (Pretest Percentages):**

Motivational Items	Lawrence (%)	Passaic (%)	Cleveland (%)
Percent indicating interest in teaching nutrition	90	95	100
Percent indicating interest in incorporating nutrition activities into their classrooms	100	100	100
Percent indicating that students like nutrition subjects as well as other subjects	60	79	89
Percent indicating that they try to influence the food choices their students make outside of school	89	81	57
Percent indicating that they plan to incorporate nutrition more often into their classroom activities	100	90	100
Percent indicating that the classroom is an appropriate place to teach students about nutrition	90	95	100
N (number of teachers completing questionnaires)	(10)	(21)	(14)

The results across the districts demonstrate that the teachers were highly enthusiastic about nutrition education. For example, every teacher expressed an interest in incorporating nutrition activities into their classrooms, and nearly all said they had plans to actually do so. Almost all expressed an interest in teaching nutrition and felt the classroom was an appropriate place to

do it. Slightly fewer thought their students were as interested in nutrition as in other subjects. Almost all of the teachers in each of the three communities also recognized the benefits of nutrition education for their students.

**Table 6e. Percent of Teachers Agreeing With Statements Regarding the Benefits of Nutrition Education (Pretest Percentages):**

Potential Benefits of Nutrition Education	Lawrence (%)	Passaic (%)	Cleveland (%)
Nutrition education in the classroom will help children choose healthier foods to eat.	90	90	100
Teaching nutrition will help reinforce other subjects that they teach.	60	95	100
Good nutrition can positively affect students' class performances.	90	100	100
N (number of teachers completing questionnaires)	(10)	(21)	(14)

### **6.5.2 Adherence to Curriculum**

As described in Chapter 1, the Scholastic kits are composed of nine lessons for Module 1 (Pre K - K) and eight lessons each for Modules 2 (Grades 1-2) and 3 (Grades 3-5). During teacher training for the pilot, Module 1 teachers were told they should complete at least eight of the nine lessons and that they should conduct three activities per week, with no explicit instructions as to which activities. The teachers for Modules 2 and 3 were instructed to teach all eight lessons, complete the Getting Started session and each of the activities included in the lesson, complete the Lunchroom Link for at least four of the lessons, and use the student and parent reproducibles as directed in the Scholastic lessons. Adherence to the curricula was measured by the number of times the teachers reported (through activity logs) completing the recommended lessons, activities, and Lunchroom Links, as well as the degree to which they used the materials as directed. Because there were no explicit activities required for Module 1, the data on activities and materials are not used in measuring adherence for this module.

#### *Lawrence*

Tables 6f through 6h display information on the implementation of lessons and activities and the use of the materials in Lawrence. Note that the pilot was implemented in only the fifth grade in Lawrence; thus, data are only presented for Module 3. Table 6f shows that all of the teachers in Lawrence reported teaching each of the eight lessons in the module. The average duration of the lessons taught was 2 hours; thus, the cumulative number of hours of exposure per class was 16 hours.

**Table 6f. Lawrence: Classroom Implementation of Scholastic Module**

	<b>Module 3 (Grade 5)</b>	<b>TOTAL</b>
# of Scholastic Lessons (per module)	8	8
Avg. # of Lessons Taught <sup>1</sup>	8.0	8.0
Avg. Duration Per Lesson Taught (Hrs) <sup>2</sup>	2.0	2.0
Avg. Planning Time Per Lesson Taught (Hrs) <sup>2</sup>	1.0	1.0
Cumulative Duration Per Class (Hrs) <sup>1</sup>	16.0	16.0

<sup>1</sup> Averages reflect cumulative totals divided by the number of teachers/sections.

<sup>2</sup> Averages reflect cumulative totals divided by the number of lessons taught in each module.

Table 6g shows that the Lawrence teachers also conducted most of the activities in the Scholastic module as directed. The exceptions are Activity 3, which was conducted only about half the time, on average, and the Lunchroom Link, which was conducted an average of 2.3 times rather than the recommended 4 times. Although the use of student reproducibles and videos exceeded the minimum recommended (Table 6h), Lawrence teachers used the student magazines somewhat less than recommended and the parent reproducibles infrequently.

**Table 6g. Lawrence: Average Number of Times Activities Were Conducted Per Class**

<b>Lesson</b>	<b>Module 3 (Grade 5)</b>	
	<b>Recommended/ Available</b>	<b>Conducted</b>
Getting Started	8	7.9
Activity 1	8	7.6
Activity 2	8	7.6
Activity 3	2	1.0
Lunchroom Link	4	2.3
Home Connection	6	1.0
Exercise Connection	1	0.3
Wrap it Up	8	4.3
Taking it Further	8	0.1

**Table 6h. Lawrence: Average Number of Times Materials Were Used Per Class**

Material	Module 3 (Grade 5)	
	Recommended	Conducted
Parent Information Sheets (reproducibles)	7	1.7
Student Information Sheets (reproducibles)	7	7.7
Student Magazine	6	3.9
Video	5	6.4

While reporting that Team Nutrition offered a solid curriculum and incorporated many useful materials, the teachers reported to the TNCs that they had difficulty in integrating the curriculum into other subjects. As a result, very few teachers were interested in continuing to participate in the fall. The TNC remarked that other teachers have declined to volunteer because of the complaints about the length of the lessons and the difficulty of implementation. Ultimately, however, the teachers agreed to continue the project in Phase II.

The TNC offered additional explanations for the teachers' reactions to implementing the curriculum:

- The lack of materials in Spanish for parents and for the teachers of bilingual classes was very disappointing. The absence of Spanish language materials meant that the teachers could not reach out to parents or students in some classes.
- The school districts recently installed a system in which the teachers' jobs depended on students' scores on various standardized tests. The teachers may have felt that the time spent on implementing the TN curriculum was not as worthwhile as teaching the academic subjects on which the students will be tested and for which the teachers would be held accountable.

*Passaic*

Table 6i shows that teachers in Passaic completed most of the 8 lessons in Modules 2 (7.3) and 3 (6.6), as well as most of the required 8 lessons for Module 1 (6.8). The average duration of the lessons implemented was 1.4 hours for Module 1, 2.6 hours for Module 2, and 1.8 hours for Module 3. The kindergarten classes were thus exposed to an average of 9.2 hours of TN lessons, while the first and fifth grade hours received an average of 19.2 and 11.8 hours, respectively.

**Table 6i. Passaic: Classroom Implementation of Scholastic Module**

	Module 1 (Kindergarten)	Module 2 (Grade 1)	Module 3 (Grade 5)	All Modules
# of Scholastic Lessons (per module)	9	8	8	25
Avg. # of Lessons Taught <sup>1</sup>	6.8	7.3	6.6	7.0
Avg. Duration Per Lesson Taught (Hrs) <sup>2</sup>	1.4	2.6	1.8	2.1
Avg. Planning Time Per Lesson Taught (Hrs) <sup>2</sup>	0.9	1.0	2.6	1.6
Cumulative Duration Per Class (Hrs) <sup>1</sup>	9.2	19.2	11.8	14.5

<sup>1</sup> Averages reflect cumulative totals divided by the number of teachers/sections.

<sup>2</sup> Averages reflect cumulative totals divided by the number of lessons taught in each module.

As shown in Table 6j, the Passaic teachers conducted some of the activities in the Scholastic lessons less than recommended. This is particularly true for Activity 3 and the Lunchroom Link activities, which were conducted about half as often as recommended. In general, the fifth grade teachers conducted fewer activities explaining why the duration of lessons for the fifth graders was shorter than for the first graders. The teachers in Passaic also appear to have used the materials in the Scholastic lessons somewhat less than recommended (Table 6k).

**Table 6j. Passaic: Average Number of Times Activities Were Conducted Per Class**

Lesson	Module 2 (Grade 1)		Module 3 (Grade 5)	
	Recommended/ Available	Conducted	Recommended/ Available	Conducted
Getting Started	8	6.3	8	5.5
Activity 1	8	7.2	8	6.3
Activity 2	8	6.9	8	4.9
Activity 3	2	1.1	2	1.0
Lunchroom Link	4	1.8	4	2.4
Home Connection	7	4.0	6	4.0
Exercise Connection	0	0.0	1	0.5
Wrap it Up	8	4.8	8	1.4
Taking it Further	8	1.7	8	2.3

**Table 6k. Passaic: Average Number of Times Materials Were Used Per Class**

Material	Module 2 (Grade 1)		Module 3 (Grade 5)	
	Recommended	Used	Recommended	Used
Parent Information Sheets (reproducibles)	7	4.9	7	4.5
Student Information Sheets (reproducibles)	8	5.3	7	5.1
Student Magazine	2	1.3	6	4.1
Video	4	2.0	5	2.3

Each classroom teacher taught the lessons as part of the health and science curriculum. The TNC noted that classroom implementation was delayed because it was initially believed that implementation of the classroom activities would not require any support from the food services staff. When they realized that food service staff would have to be involved in a number of classroom activities, the food services staff began to follow the modules along with the classes so they could “keep a step ahead and be sure to get them the supplies when they needed them.” The TNC enlisted the involvement of several food service staff members and made them responsible for coordinating various efforts with the classroom activities.

The teachers expressed concern about the difficulty of obtaining some of the items specified in the module and indicated that the curriculum should provide alternative items. The TNC also reported that the “teachers needed a lot of materials that they did not have and I had to go out and get the materials and deliver them to the school.”

*Cleveland*

The teachers in Cleveland taught most of the lessons in the Scholastic modules (Table 6l).

~~Knowledge of teachers taught all of the lessons in Module 4 while the first and third~~

**Table 6l. Cleveland: Classroom Implementation of Scholastic Module**

	<b>Module 1 (Kindergarten)</b>	<b>Module 2 (Grade 1)</b>	<b>Module 3 (Grade 3)</b>	<b>All Modules</b>
# of Scholastic Lessons (per module)	9	8	8	25
Avg. # of Lessons Taught <sup>1</sup>	8.0	7.6	7.5	7.7
Avg. Duration Per Lesson Taught (Hrs) <sup>2</sup>	1.8	1.7	2.1	1.9
Avg. Planning Time Per Lesson Taught (Hrs) <sup>2</sup>	1.7	1.5	0.9	1.3
Cumulative Duration Per Class (Hrs) <sup>1</sup>	14.6	12.8	15.8	14.5

<sup>1</sup> Averages reflect cumulative totals divided by the number of teachers/sections.

<sup>2</sup> Averages reflect cumulative totals divided by the number of lessons taught in each module.

Except for the Lunchroom Links, the Cleveland teachers were also fairly faithful about conducting the activities in the Scholastic lessons (Table 6m). The third grade teachers taught the Getting Started session somewhat less than recommended, while the first grade teachers reported conducting Activity 3 only about half the time. As shown in Table 6n, the first grade teachers used the parent and student reproducibles and the video only half as often as recommended; however, the third grade teachers were fairly consistent with the recommendations.

**Table 6m. Cleveland: Average Number of Times Activities Were Conducted Per Class**

<b>Lesson</b>	<b>Module 2 (Grade 1)</b>		<b>Module 3 (Grade 3)</b>	
	<b>Recommended/ Available</b>	<b>Conducted</b>	<b>Recommended/ Available</b>	<b>Conducted</b>
Getting Started	8	6.6	8	5.5
Activity 1	8	7.4	8	7.0
Activity 2	8	6.4	8	6.7
Activity 3	2	1.0	2	1.7
Lunchroom Link	4	2.2	4	1.0
Home Connection	7	2.0	6	3.8
Exercise Connection	0	0.4	1	0.5
Wrap it Up	8	3.6	8	4.7
Taking it Further	8	0.2	8	1.3

**Table 6n. Cleveland: Average Number of Times Materials Were Used Per Class**

Material	Module 2 (Grade 1)		Module 3 (Grade 3)	
	Recommended	Used	Recommended	Used
Parent Information Sheets (reproducibles)	7	3.6	7	6.3
Student Information Sheets (reproducibles)	8	4.4	7	6.5
Student Magazine	2	2.8	6	4.5
Video	4	2.2	5	4.2

The TNCs in Cleveland indicated that the implementation was very successful. The TNCs stressed to the teachers the importance of integrating the curriculum into other subjects; as a result, the curriculum was integrated into science, math, and reading lessons. The TNCs also stressed using parents as volunteers in the classrooms and reported that some of the teachers did call mothers for assistance.

The TNCs facilitated implementation by supplying teachers with copies of the student and parent reproducibles in order to reduce the burden on teachers and respond to the schools' budget constraints.

The TNCs noted that implementation of the classroom curriculum also was facilitated by the teacher training and by the teachers' commitment to the project. However, they would have liked more time to prepare the teachers to implement the curriculum.

### **6.5.3 Teacher Attitudes Toward Scholastic Materials**

Table 6o displays the teacher attitudes toward the Scholastic materials for Passaic and Cleveland. Because only 3 teachers in Lawrence completed this section of the post-implementation questionnaire, their data are not included. Even in Passaic and Cleveland, fewer than 10 teachers completed this portion of the questionnaire, so the results should be interpreted with caution.

Based on the TNC interview responses, the experience of implementing the Scholastic module was quite different in Lawrence than in Cleveland and Passaic. The general consensus at all of the sites was that the timeframe for implementing the curriculum was far too short, the lessons took much longer to implement than anticipated, and the time of year conflicted with other activities and curriculum requirements. In Passaic and Cleveland, the TNCs reported that despite these problems, the teachers were enthusiastic about the curriculum and looked forward to using it in the future. In Lawrence, however, the TNC reported that even though many of the teachers liked the curriculum, they did not feel it was worth the time and effort and had to be persuaded to use it again in the fall.

The teachers in Lawrence voiced concerns over two issues. First, the teachers felt that they would not have enough time to complete the entire curriculum. Second, they were concerned about the language barrier for a large majority of their students (80 percent Hispanic). They noted that the language barrier also affected their contact with parents—most of the home activities were not sent home to the parents for this reason.

The teachers in Passaic also raised concerns about the amount of time needed to complete all lessons within the implementation timeframe. Another concern centered on the teachers' access to the supplies needed to implement all the lessons.

Although the teachers in Cleveland also were concerned about the amount of time needed to prepare for each of the lessons, as well as getting the necessary supplies for the activities, they felt that they would be able to resolve these issues and finish implementation of the lessons within the allotted timeframe. According to one of the TNCs, all of the teachers “were very favorable toward the curriculum and really want to do it again.” In addition, she said that they learned a lot and enjoyed getting the students involved. The TNC also felt that the activities and lessons helped promote better communication between the food service and the academic staff at the schools.

## **6.6 IMPLEMENTATION OF SCHOOL-WIDE CORE ACTIVITIES**

Figures 6a1, 6a2, and 6a3 contain timelines for the school-wide and community events in the three communities.

Many of the school-based events in Lawrence were largely based on the Scholastic modules. A listing of some of the events follow:

**Table 60. Teacher Attitudes Toward Scholastic Materials**

	Passaic	Cleveland
<b>Teachers Who Reported That They Were Satisfied With Scholastic Materials</b>	<b>75%</b>	<b>89%</b>
<b>% of Teachers Who Agree or Strongly Agree That:</b>		
The Scholastic materials were appropriate for the developmental level of the students in my class.	100	100
The Scholastic materials were appropriate for the educational levels of the students in my class.	100	100
The Scholastic materials were culturally appropriate for the students in my class.	88	100
The time required to prepare to teach the Scholastic lessons was reasonable (considering that they were new to me).	50	56
The time required to teach the Scholastic lessons was reasonable.	50	33
The content of the Scholastic materials did provide sufficient background for my nutrition-related teaching needs.	38	100
The classroom activities met my nutrition-related teaching needs.	63	56
The activities suggested in the Scholastic materials were appropriate for my classroom.	63	63
Having the Scholastic materials makes it easy to teach about nutrition.	100	89
I will teach more about good nutrition in the future if I can use the Scholastic materials again.	63	100
The Scholastic materials are better than other nutrition teaching materials I have used.	33	100
N (number of teachers completing questionnaires)	(8)	(9)

As in the other communities, most if not all of the teachers in Passaic and Cleveland found the Scholastic materials developmentally, educationally, and culturally appropriate for their students' backgrounds. However, like the other communities, many fewer thought the time required to prepare and teach the Scholastic lessons was reasonable. Roughly three-fifths of the teachers in each of the communities said the activities in the lessons were appropriate for their classroom and met their nutrition-related teaching needs. However, while all nine Cleveland teachers said the content of the lessons did provide sufficient background for their teaching needs, just 38 percent of the Passaic teachers agreed that this was the case. Most of the teachers in both communities said the Scholastic materials made it easy to teach nutrition. All of the teachers in Cleveland said the materials were better than others they had used and that they would teach more about nutrition if the Scholastic materials were available. In Passaic, two-thirds of the teachers said they would teach more about nutrition if they could use the Scholastic materials, but only one-third said the materials were better than others they had used.

- A series of events, such as taste-testing foods, menu planning, and kitchen tours, took place. These activities are found in the modules and were replicated with students from other grades. A food pyramid activity was also offered to students in the district. The district viewed these activities as school-wide events.
- A **Parent Nutrition Training** was hosted by one of the implementation schools. Parents from all three implementation schools were invited, although not many attended from the other two schools. A bilingual discussion was held on food labels and healthy eating choices.

The Lawrence TNC noted that cafeteria activities were very informative and everyone involved enjoyed them. She felt that they gave both the students and teachers a different perspective of the food services staff.

In Passaic, the following school-based core activities were conducted:

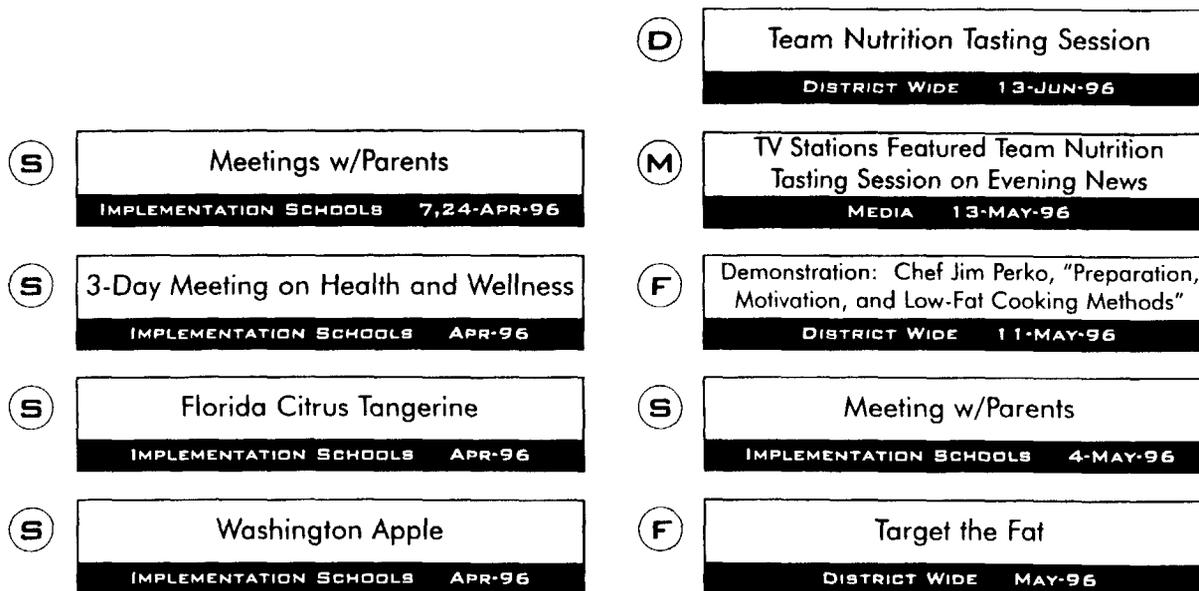
- A **Picnic in the Park** was held for all of the kindergarten children in one of the implementation schools. During the picnic, the children learned how to assemble a nutritious picnic lunch, and teachers reviewed the four food groups.
- An **International Food Day** was developed for the first and fifth grades of one of the implementation schools. This involved tasting a variety of foods from different countries and included Mexican, Italian, Chinese, and French food. The nutrition messages were to increase the intake of vegetables, decrease the intake of fat, and eat a variety of foods. The TNC noted that several parents and representatives from various organizations, such as the Spanish Information Center and Head Start Center, were in attendance.
- A **Nutrition Olympic Day** was held in which nutrition was featured in conjunction with various sports events such as races, long jumps, etc. The event was held at the high school football field, and refreshments were provided by food service staff. The refreshments included a vegetable station with various vegetables and dips, a fruit station, and a meat station. Nutrition education materials were available for parents and students, and students were given the food pyramid to help them identify the various food groups. The TNC noted that a key message for this activity was the importance of nutrition for athletes.

# Figure 6a1: Cleveland, Ohio

## Legend

- S** School Event
- D** District-Wide Event
- M** Media Event
- F** Food Service Training

6-18



**February/March**

**April**

**May/June**

# Figure 6a2: Lawrence, Massachusetts

## Legend

- (S) School Event
- (D) District-Wide Event
- (M) Media Event
- (F) Food Service Training

6-19

(S)

Parent Nutrition Training

LEAHY 18-MAR-96

(F)

Training on Dietary Guidelines

DISTRICT WIDE 6-MAY-96

(D)

Taste of Prevention Health Fair

DISTRICT WIDE 5-MAY-96

(F)

Training on Role in Team Nutrition

IMPLEMENTATION SCHOOLS 1,8,22-MAY-96

(M)

Coverage of Taste of  
Prevention Health Fair

DISTRICT WIDE MAY-96

**February/March**

**April**

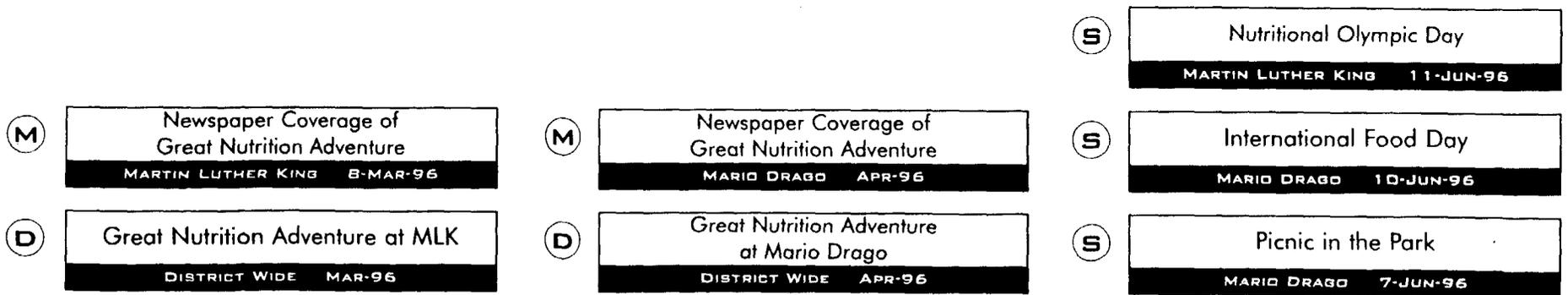
**May/June**

# Figure 6a3: Passaic, New Jersey

## Legend

- (S) School Event
- (D) District-Wide Event
- (M) Media Event
- (F) Food Service Training

6-20



**February/March**

**April**

**May/June**

Cleveland conducted the following school-based core activities:

- A **Florida Citrus Tangerine Event**, implemented in the two pilot schools, provided students the opportunity to taste tangerines. The Florida Citrus Commission provided a volunteer, T-shirts, and puzzles. Teachers wore the T-shirts and presented lessons to children on the importance of eating fruits. The TNCs noted that the event was very successful. They said that prior to this event, only about one-third of the children in the schools had ever eaten a tangerine.
- A **Washington Apple Event** for which the Washington Apple Commission provided games and materials for each elementary school in the district. The TN project provided apples for all of the children. Pogs were given to reward children for eating their apples and were given to TN classroom teachers for use in classroom exercises. Limited planning time did not provide enough advance notice for chefs or growers to come to the school and talk to students and prepare apple recipes, as originally planned.
- Two **parental contact activities** at which a district staff member spoke to parents and teachers from the pilot implementation schools. During these meetings, materials and brochures were distributed, and concepts relative to nutrition and cultural diversity were discussed. The focus was on the influence of culture on the food choices that a family makes and how their lifestyles and health are affected. In addition, a large district meeting was held on 3 consecutive days, with approximately 120 parents, teachers, and students attending. The scope of the meeting involved health and wellness issues. One focus area included nutrition, eating styles, and making healthy choices. Students were able to discuss these issues and learn how nutrition impacts their lives.

## 6.7 FOOD SERVICE ACTIVITIES AND CHANGES

### 6.7.1 *Plans for Meeting Dietary Guidelines*

The three sites vary with respect to meeting the Dietary Guidelines.

- Lawrence had already implemented the new meals from the USDA Commodities Cookbook.
- Passaic instituted some menu changes focusing on lower fat, higher fiber, and increased fruits and vegetables. However, these plans are still in the initial stages. According to the TNC, the school district is currently in the process of revising the contract specifications for the vendor that supplies the preplates for the school meals. The new specifications will require that the contractor have a total weighted average for 5 days that meets dietary guidelines for fat (e.g., 30 percent or less).

- TNCs in Cleveland anticipate being in compliance with the Guidelines by winter of 1997. The district has taken steps to meet the guidelines, including reducing the fat in milk, increasing use of grilled foods, and redoing recipes to reduce fat and increase fiber. They also are requesting lower fat items from vendors, and vendors have agreed to provide nutritional analysis information on their products.

### **6.7.2 Food Service Staff Training**

Training of food service staff also varied by site.

- The Lawrence TNC reported that the implementation schools' food service staff had recently received 10 hours of training over 4 weeks on Team Nutrition and that revised menus are in place. The district food service employees also attended a training session on the Dietary Guidelines. She noted that, in contrast to the teachers, the food service staff has been very happy with the project and feels that linkages between the food service and school staff have been strengthened by the project.
- In Passaic, food service training is planned for the fall. The district has hired the nutrition educator from Beth Israel Hospital's Healthy First program to conduct menu analysis and training on meeting Dietary Guidelines with food service staff.
- Cleveland conducted two training sessions for food services staff. One training targeted food service managers, cooks, and area supervisors. Two chefs demonstrated cooking and cutting techniques, and one of the TNCs provided nutrition information. The second training involved five 2.5-hour sessions (to five different groups of food service personnel) of a program called Target the Fat. This training was provided by The Dairy Council and one of the TNCs and targeted each area's elementary school satellite cooks, secondary school food service managers and cooks, and food services staff. During these sessions, the TNC talked about the TN project, and the Dairy Council talked about the Dietary Guidelines.

The TNCs reported that the response to these training sessions was very positive. As they noted: "Food service staff had not received nutrition education on a formal basis until now. Many of the people who run the cafeterias and cook the food have not been trained in nutrition. They were really excited about learning the new information and they all wanted to come to the training."

## **6.8 COMMUNITY ACTIVITY**

The TNC described the community event in Lawrence as "very successful" and "likely to be continued in future years." The TNC set up a booth at the Taste of Prevention, an all-day activity that included 40 different community agencies. The focus of the event was making

healthy lifestyle choices as well as acquainting the community with various prevention resources in the greater Lawrence area. The TN booth was designed to educate the community on the preparation of healthy meals. TN materials were displayed and “healthy food” samples were available for tasting. It was estimated that over 1,000 people attended the greater event; no information was collected on the number of people who visited the TN booth.

The Passaic community events consisted of two assemblies open to the general public, one held at each of the pilot implementation schools. The assemblies were called the Great Nutrition Adventure and included speakers and a social hour, during which various foods were displayed and made available for tasting. The first of these events was attended by approximately 150 people. Food was donated and displayed by a food vendor and a bakery, and a jazz band from the high school provided entertainment.

The TNC noted that the nutrition message for this event was to eat healthy snacks that are low in fat, particularly fresh fruits and vegetables. After this event, the parent group at the school requested that the TNC make a presentation to the group at a later date.

The second event was held in conjunction with a book fair and was attended by approximately 450 people. A local dietitian gave a lecture and the TNC reported that the audience was very interested in the topic. The primary nutrition message was to eat less fat and more fiber.

Participants at both community events included representatives from the Hispanic Information Center, parent-teacher organizations, Local Head Start Programs, and Beth Israel Hospital’s Health First Program.

The Cleveland community event was a Team Nutrition Tasting Session which was held in the lobby of the downtown Cleveland office of the Board of Education just prior to a meeting of the Board of Education. The nutrition message for this event was that nutritious food also tastes good. The district also wanted to inform the community about the kinds of foods that will be available to the children at school. An additional goal of the event was to highlight the division of food services, which does not often receive recognition in the school system.

For this event, representatives from the Dairy Council, the American Heart Association, and the Perinatal Nutrition Network provided tables with nutrition-related information. Food services staff prepared and served recipes from the new USDA cookbook, and sample recipe cards were distributed. The TNCs noted that even though this was a major undertaking because “Food Services has not done catering on such a large scale recently,” the event was “very festive” and “very successful.” They estimated that approximately 500 people attended,

including invited guests from various community organizations, parent groups, and regional USDA personnel.

## **6.9 COMMUNITY PARTNERS**

Limited information is available from these communities on developing community partnerships and partner satisfaction with their participation. However, the section below contains information obtained from interviews with the TNCs. Building partnerships in Lawrence centered primarily around the community event, a Taste of Prevention, which was organized by the Tobacco Control Board. The Commonwealth of Massachusetts has an ongoing, large-scale tobacco prevention initiative that targets youth. Part of the initiative is the active recruitment and involvement of community groups to serve as members of local coalitions and to participate in community-wide prevention activities. The Taste of Prevention was one of the activities sponsored by the local coalition. It was designed to bring together a significant number of existing community-wide prevention programs for a broad-scale educational outreach initiative.

The community partnerships developed in Passaic were the result of contacts initiated by the TNC. Local food vendors contributed to the community events by donating food. In addition, the TNC noted that representatives from various community agencies and organizations attended the community events (described in detail earlier in this chapter).

Cleveland's late entrance into the program's planning process and the district's requirement of administrative approval prior to establishing working relationships with organizations or individuals outside of the school system created challenges for the TNCs. However, the TNCs managed to establish partnerships with the Florida Citrus Commission, the Washington State Apple Commission, the Dairy Council, the American Heart Association, and the Perinatal Nutrition Network. The late start did interfere with recruiting chefs for the school-wide events. Although interested in participating, many chefs had previously scheduled engagements that precluded their involvement.

## **6.10 MEDIA EVENTS AND MEDIA COVERAGE**

The community events in Cleveland and Lawrence received fairly extensive media coverage from TV stations and local newspapers. In Lawrence, advertisements for the Taste of Prevention Health Fair were displayed on MTA buses and in local newspapers. PSAs for the event were broadcast on local TV and radio stations.

In Cleveland, Team Nutrition also was written up in a monthly paper called the *Stakeholder*, which is disseminated to all public schools and to the community around the schools. One of the district staff writes a regular column for this paper, and many of her articles featured Team Nutrition. In Cleveland, four TV stations were present at the TN Tasting Session and featured the event on the evening news.

Although Passaic's community events did not receive television or radio coverage during Phase I, they were covered by a reporter from the local newspaper. Team Nutrition also was mentioned in two articles in the New Jersey School Food Services Association's newsletter and in two articles on nutrition in a local newspaper. The TNC sent news releases to the papers and the paper sent a reporter. The Passaic TNC indicated that he has developed a relationship with this reporter, who now calls him routinely to find out whether there are any TN activities.

## 6.11 LESSONS LEARNED IN ADDITIONAL TEAM NUTRITION IMPLEMENTATION SITES

While the process evaluation in these three communities was less extensive than in the other four, several valuable lessons can be drawn from their experiences.

- **Involve a food services administrator from the onset.** This involvement should encompass implementation of Team Nutrition, even with respect to the classroom implementation. As the Passaic TNC noted, they originally believed that the classroom implementation would be a separate activity and not require the involvement of food services. However, because so many of the classroom activities are oriented toward food preparation or food tasting, teachers required materials and supplies that were not readily available in their classrooms or their schools.
- **Examine how to integrate lessons into existing curricula.** It is important to determine, prior to implementation, how the lessons may be successfully integrated with existing academic curriculum. This may help avoid the problem of teachers feeling that the curriculum takes time away from teaching the basic academic subjects on which students are tested and teachers are evaluated. In the Cleveland and Passaic sites, this integration appeared to be emphasized throughout the project and to have already been established by the time of implementation. In contrast, in the Lawrence site, the teachers may have needed additional encouragement on the best way to do this.
- **Use materials that are appropriate for the student population (i.e., Spanish-language materials).** The review of the experiences of these three sites in implementing the TN project reveals that the project was most successful

- **Actively support the teachers.** District and/or school staff can support teachers—assembling materials, making sure that teachers had the items and materials they needed, and delivering these to the schools and the teachers (rather than making the teachers obtain the materials themselves)—to help them in the effort to implement an extensive curriculum in a relatively short period of time.

**CHAPTER 7: CROSS-SITE SUMMARY OF TEAM NUTRITION PROJECT  
IMPLEMENTATION**

As described in Chapter 1, the TN Pilot Implementation Project was designed as an efficacy evaluation conducted in a field setting. It is intended to assess whether Team Nutrition has a positive impact when implemented as conceived, as well as to inform the broad TN effort while the assessment of outcomes awaits completion of Phase II of the pilot. However, based on interviews and observations across the seven districts, the following key messages and themes can be extracted from Phase I of the pilot project.

## **7.1 THOUGHTS ON NUTRITION EDUCATION IN THE SCHOOLS AND SCHOOL FOOD SERVICE PROGRAMS**

**Good nutrition habits are an important life skill that can be supported by school food service staff, school administrators, and teachers.**

The potential success of implementing Team Nutrition in other school districts may depend on the importance that the districts ascribe to nutrition education and the quality of the school lunches. There was general support for nutrition education and the school lunch program in the pilot communities.

Prior to the start of the implementation project, TNCs and school administrators expressed a high level of support for nutrition education and school food service.

- School administrators at TN schools consistently commented that nutrition education is an important task, especially for schools espousing a “healthy mind, healthy body” theme.
- One principal noted, “It is as important to teach nutrition as it is the basic academics – to help children form good habits that will last them the rest of their lives.”
- While supportive of nutrition education and the school food service staff, school administrators indicated there was room for improvement in the school meals. They frequently commented that they would like to see more low-fat meal choices provided to their students. In addition, they noted that providing quality school meals took on an increased importance for students from lower income families. In these cases, the school’s breakfast and lunch might be the only square meals the students receive.

Prior to the introduction of Team Nutrition, teachers in all seven districts expressed a high level of support for teaching nutrition. In addition, nearly all teachers recognized the benefits of teaching nutrition. (See Tables 7a and 7b).

- Ninety-six percent of teachers surveyed indicated interest in teaching nutrition.

- Ninety-nine percent indicated interest in incorporating nutrition activities into their classrooms.
- Ninety-six percent indicated that the classroom is an appropriate place to teach students about nutrition.
- Ninety-eight percent agreed that good nutrition can positively affect students' class performances.

**Table 7a. Teacher Motivation Prior to Implementation (Pretest Percentages): All Districts; All Grades**

Motivational Items	%
Percent indicating interest in teaching nutrition	96
Percent indicating interest in incorporating nutrition activities into their classrooms	99
Percent indicating that students like nutrition subjects as well as other subjects	84
Percent indicating that they try to influence what their students select in the lunchroom	63
Percent indicating that they try to influence the food choices their students make outside of school	73
Percent indicating that they plan to incorporate nutrition more often into their classroom activities	87
Percent indicating that the classroom is an appropriate place to teach students about nutrition	96
N (number of teachers completing questionnaires)	(139)

**Table 7b. Percentages of Teachers Agreeing With Statements Regarding the Benefits of Nutrition (Pretest Percentages): All Districts; All Grades**

Potential Benefits of Nutrition Education	%
Nutrition education in the classroom will help children choose healthier foods to eat.	92
Teaching nutrition will help reinforce other subjects that they teach.	92
Good nutrition can positively affect students' class performances.	98
There isn't time to teach more about nutrition in the classroom given all of the other demands.	35
My school district does not give me the time and resources to teach nutrition.	47
N (number of teachers completing questionnaires)	(139)

Experience in the pilot communities suggests that there is considerable variation in the level of nutrition education to which students are exposed. While efforts to describe nutrition education prior to Team Nutrition were not comprehensive, it is nevertheless clear that significant variation occurs not only across districts but between schools and even among teachers within the same grade. Considerable discretion is left to individual teachers on whether or how to incorporate nutrition education into the classroom. Both the variable state of current nutrition education efforts and the value school professionals place on such education provide a genuine opportunity for Team Nutrition.

## **7.2 CHALLENGES TO INTRODUCING NUTRITION EDUCATION**

**Despite support for nutrition education among school food service staff, school administrators, and teachers, the successful introduction and institutionalization of nutrition education in the classroom faces a number of challenges.**

The success of any communication/behavioral change program is determined by the program's ability to be seen, heard, remembered, and acted upon. Students are exposed to an increasingly diverse and complex academic curriculum, and they are bombarded with messages and advertisements that attempt to influence and inform them about health issues (e.g., tobacco, drugs, AIDS, safety). The USDA, TNCs, teachers, and administrators face a significant challenge in communicating TN's messages in such a way that the students find them meaningful, relevant, and important enough to remember and modify their behavior.

Specifically, introducing nutrition education in the pilot communities presented the following challenges:

- The new curriculum had to compete for class time with curricular demands and classroom preparation for standardized tests. For example, the teachers in one of the sites were in the process of implementing a new math curriculum mandated by the district that vied with Team Nutrition for the teachers' time. In addition, approximately one-third (35 percent) of the teachers surveyed reported that there is not enough time to teach more nutrition in the classroom given all of the other demands.
- In general, schools and school districts have limited resources (e.g., books, copies, food supplies, staff time) available to devote to new projects. The expenditures of resources on any project represents an opportunity cost, and Team Nutrition is no exception. However, the challenge can be mitigated by building partnerships in the community to provide support and contribute resources. Such partnerships are, in fact, a critical component of the TN approach.

- Slightly less than one-half (47 percent) of the teachers interviewed reported that the district does not provide the time and resources to teach nutrition.

Because this pilot project was designed to be evaluated during the spring 1996 semester, the pilot communities faced several additional constraints:

- Teachers and other key staff had very little opportunity for advance planning because the Scholastic classroom curricula were not complete until implementation was scheduled to begin.
- Teachers had to deliver nutrition education within a relatively brief 8- to 10-week period instead of using the entire school year. As a result, most of the teachers started implementing all of the activities as requested rather than using their discretion to select which activities within the lessons they would conduct.
- Districts had to conduct evaluation activities in addition to educational activities. The former created additional burdens for teachers, staff, and administrators. While USDA provided financial support for district evaluation efforts and information on the purpose and requirements of the evaluation, there were still concerns about the evaluation requirements and some confusion about the distinction between TN research and educational components.

### **7.3 ACCOMPLISHMENTS**

**Despite these and other challenges across the districts, the schools and teachers were able to implement most of the requirements of the pilot project. This resulted in students being reached with nutrition information through multiple and reinforcing channels, as the program is designed to do.**

#### ***Classroom Implementation***

**The teachers who implemented Team Nutrition taught most of the lessons and conducted most of the activities within the lessons (See Tables 7c and 7d).**

- On average, teachers taught more than seven of the eight or nine required lessons for each module.
- The average duration per lesson taught, across modules, was just under 2 hours.
- TN students were exposed to an average of 14.4 hours of TN lessons.
- Teachers of the Modules 2 and 3 conducted the recommended activities with the various lessons. Examples of activities include estimating and measuring service sizes, maintaining a food diary, and sorting foods according to the Food

Guide Pyramid. The major exception is the Lunchroom Link, which was conducted about half as often as recommended.

- Teachers of Modules 2 and 3 used the materials designed for the lessons often, although not as faithfully as they conducted the activities. Examples of materials for lessons include a student magazine, student and parent reproducibles, family newsletters, and a video.

**Table 7c. Classroom Implementation of Scholastic Module at a Glance:  
All Districts; By Module**

	<b>Module 1 (Pre-K &amp; K)</b>	<b>Module 2 (Grade 1-2)</b>	<b>Module 3 (Grade 3-5)</b>	<b>All Modules</b>
# of Scholastic lessons (per module)	9	8	8	25
Avg. # of Lessons Taught <sup>1</sup>	7.5	7.1	7.1	7.2
Avg. Duration Per Lesson Taught (Hrs) <sup>2</sup>	1.60	2.17	2.15	1.99
Avg. Planning Time Per Lesson Taught (Hrs) <sup>2</sup>	1.43	1.30	1.44	1.39
Cumulative Duration Per Class (Hrs) <sup>1</sup>	12.00	15.51	15.31	14.40

<sup>1</sup> Averages reflect cumulative totals divided by the number of teachers/sections.

<sup>2</sup> Averages reflect cumulative totals divided by the number of lessons taught in each module.

**Table 7d Average Number of Times Activities Were Conducted Per Class:  
All Districts; By Module <sup>1</sup>**

<b>Lesson</b>	<b>Module 2 (Grade 1-2)</b>		<b>Module 3 (Grade 3-5)</b>	
	<b>Recommended</b>	<b>Conducted</b>	<b>Recommended</b>	<b>Conducted</b>
Getting Started	8	6.0	8	5.9
Activity 1	8	6.8	8	6.8
Activity 2	8	6.6	8	6.4
Activity 3	2	1.3	2	1.3
Lunchroom Link	4	2.6	4	1.6
Home Connection	7	3.5	6	3.5
Exercise Connection	0	0.4	1	0.5
Wrap It Up	8	4.0	8	2.7
Taking It Further	8	2.0	8	1.7

<sup>1</sup> Module 1 does not have comparable activities as do Modules 2 and 3; therefore, it was not included.

**Table 7e. Average Number of Times Materials Were Used Per Class:  
All Districts; By Module**

<b>Material</b>	<b>Module 2 (Grade 1-2)</b>		<b>Module 3 (Grade 3-5)</b>	
	<b>Recommended</b>	<b>Used</b>	<b>Recommended</b>	<b>Used</b>
Parent Information Sheets (reproducibles)	7	5.3	7	4.4
Student Information Sheets (reproducibles)	8	5.1	7	5.9
Student Magazine	2	1.6	6	3.8
Video	4	2.2	5	3.2

***Core Activities***

**The pilot districts exhibited a great deal of creativity in planning and conducting a variety of school-wide and community nutrition events that supported the curriculum’s messages. Every district sponsored or participated in a community-wide event that attracted from 100 to 1,000 participants. Examples of the activities included:**

- Fat Facts Week during which students created posters highlighting their favorite snacks (and their fat content) and parents and students sampled and rated a variety of low-fat items during school lunch.
- Olympic Celebration for which a TN training meal was provided and the connection between nutrition and physical activity was reinforced.
- Fruit and Vegetable Weeks in which 2 weeks were set aside (1 for fruits and 1 for vegetables) for students to sample a different fresh fruit or vegetable each day.
- Cooking with Chef Walter, a two-part chef activity. During one part, a chef from a regional news talk show taped a segment of his program at one of the implementation schools. For the second part, students were invited to appear as guests on his program. Low-fat snacks were prepared on each program.

**Cafeteria managers and staff actively participated in the classroom and school-wide activities.**

- The importance of teamwork was pervasive in the comments of the teachers, food service staff, and administrators. The teachers consistently recognized the food service staffs’ contributions, the food service staffs felt well supported by the TNCs, and most people felt that the activities improved the relationship between food service staff and school staff.

- The food service staff not only conducted cafeteria tours and provided food samples, information, and other supplies for various classroom activities, but also many cafeterias also operated as nutrition learning laboratories for students.

**District food service staff have been actively involved in creating healthier menu choices for children since USDA announced its plan to update the nutrition standards to meet the Dietary Guidelines for Americans.**

- Prior to implementing TN, the districts were taking steps to alter food preparation practices and procedures to produce healthier, low-fat meals. The changes included using less salt and butter and baking food instead of frying it.
- Most districts had conducted some analyses of their lunch menus but none had completed the USDA requirements for nutrient analysis using USDA-approved software. The reason most often cited was that the analyses were a very time- and labor-intensive process.
- For all but one of the projects, the pilot sites chose to postpone most TN pilot requirements for food service staff training until after the close of the school year.

### ***Community Partners***

**All of the pilot districts were successful at engaging community partners to participate in school- and community-wide events. Community partners assisted in the implementation of Team Nutrition by donating time, food, and educational materials.**

- A wide range of the type of organizations was involved, including chefs, Extension agents, hospitals, local health departments, wholesale food vendors, public health associations, grocery stores, and community service organizations.
- Outreach to community partners was a relatively new activity for some of the TNCs, but they found that organizations were willing to participate if provided well-defined roles and responsibilities. Assistance often came from nontraditional allies such as wholesale food vendors.
- Chef events were held in almost every pilot district. In one district, chefs came to implementation schools to prepare a low-fat snack for fourth graders. In another district, a local chef worked with food service staff to prepare a new USDA recipe for chicken stir-fry and discuss different seasoning techniques.
- In general, the community partners were satisfied with their partnership in the TN effort and would recommend that other organizations and businesses become involved.

### ***Media Events and Media Coverage***

**Although working with the media was a relatively new experience for the school districts, almost every site generated TV and newspaper coverage for the school-wide and community activities.**

- The districts planned media events to coincide with school-wide or community events, not as separate activities.
- USDA-disseminated Disney PSAs using the characters from “The Lion King” to talk about good nutrition represented another effort to get the TN message out to the media. This was apparently successful in reaching the students; at least two-thirds of the fourth graders in each of the intensive process districts recalled seeing the Disney characters, Pumba and Timon, talk about good nutrition on television.

### ***Parent Involvement***

**Involving parents represented both a goal of and a challenge to Team Nutrition. The efforts to reach parents through the media, school-wide and community events, and take-home materials appear to have been successful (See Tables 7e, 7f, and 7g).**

- Nearly one-half of the fourth grade parents across the four intensive process districts had heard of Team Nutrition through some medium – usually the newspaper (31percent) or television (29 percent).
- Nearly all (92 percent) of the fourth grade parents surveyed were aware of some TN event, although just 23 percent participated in some TN event.
- Most of the parents (77 percent) reported participating in some nutrition-related activity in the home with their child. Fewer parents recalled seeing the parent newsletter or student magazine.

**Table 7f. Parent Awareness of Team Nutrition:  
Intensive Process Districts; Fourth Grade Only**

<b>% of Fourth Grade Parents Reporting They:</b>	<b>%</b>
Heard of Team Nutrition through any medium (Net)	47
Heard of Team Nutrition on the television	29
Heard of Team Nutrition on the radio	12
Heard of Team Nutrition in the newspaper	31
Aware of any TN event (Net)	92
Were aware of a TN community event	41
Were aware of a TN classroom event	88
Were aware of a TN school-wide event (outside of classroom)	66
Participated in a TN event in child's school	23
N (number of parents completing questionnaires)	(567)

**Table 7g. Percentage of Fourth Grade Parents Reporting Participation in Nutrition  
Activities in the Home:  
Intensive Process Districts; Fourth Grade Only**

<b>Home Activities</b>	<b>%</b>
Net reporting any activity	77
Family nutrition projects	44
Other nutrition homework	45
Family reading materials	49
Other activities	22
N (number of parents completing questionnaires)	(567)

#### **7.4 INITIAL PERCEPTION/OPINIONS OF TEAM NUTRITION**

**The satisfaction teachers, parents, food service staff, and project coordinators expressed with the TN Program was widespread. Team Nutrition was successful on many fronts, but what mattered most was the positive impact nutrition education had on the students.**

- Eighty-one percent of the teachers agreed that the Scholastic materials made it easy to teach nutrition and indicated that they would teach nutrition in the future if the same materials were available.

- Eighty-three percent of teachers implementing Team Nutrition said that the Lunchroom Links were somewhat or very effective at supporting their nutrition education efforts.
- Although roughly half of the teachers expressed concerns about the amount of time required to plan and carry out lessons, a majority were enthusiastic about their experience.
- Overall, the teachers and food service staff were very positive about the core events and activities and believed that they successfully conveyed the intended nutrition messages and engaged the students' interest.
- During interviews with the fourth grade teachers, this kind of insightful remark was typical—"Hearing the children talk about food labels and nutrition choices outside of class tells me that they learned something."
- Food service staff were similarly glowing in their praise of the program and the kids:

"I hear the children discuss nutrition when they come through the line....They talk about the pyramid a lot, and we never heard that before."

When asked if they would recommend Team Nutrition to other school districts, a typical response was "Yes, because it is for the kids. They will be healthier adults."

"Everyone was surprised at how much the children liked the curriculum. The teachers got very excited about it and the principals were very supportive."

"When I first found out about Team Nutrition, I thought, "Oh no, I don't want to do this, but after I saw the kids' reactions, my attitude changed a lot. I'm very positive about the program now."

- Finally, and most importantly, 92 percent of fourth grade students reported that they had done nutrition activities in their school cafeteria.

**Table 7h. Teacher Attitudes Toward Scholastic Materials (Posttest Percentages): All Districts; All Grades**

<b>Teachers who reported that they were satisfied with Scholastic materials overall</b>	<b>88%</b>
<b>Percent of Teachers Who Agree or Strongly Agree That:</b>	
The Scholastic materials were appropriate for the developmental level of the students in my class.	90
The Scholastic materials were appropriate for the educational levels of the students in my class.	89
The Scholastic materials were culturally appropriate for the students in my class.	96
The time required to prepare to teach the Scholastic lessons was reasonable (considering that they were new to me).	52
The time required to teach the Scholastic lessons was reasonable.	49
The content of the Scholastic materials did provide sufficient background for my nutrition-related teaching needs.	63
The classroom activities met my nutrition-related teaching needs.	64
The activities suggested in the Scholastic materials were appropriate for my classroom.	77
Having the Scholastic materials makes it easy to teach about nutrition.	81
I will teach more about good nutrition in the future if I can use the Scholastic materials again.	81
The Scholastic materials are better than other nutrition teaching materials I have used.	66
N (number of teachers completing questionnaires and rating Scholastic materials)	(110)

## 7.5 TRAINING

**Providing training for teachers on the application of the Scholastic materials was a beneficial component of the pilot project. However, training programs should be scheduled and developed with input from the teachers responsible for implementing the curricula.**

Teachers felt that training should focus on aspects of the curriculum and on nutrition information rather than on teaching skills. If the focus on teaching methods is maintained, teachers need to be provided a rationale for teaching skills necessary for achieving behavior change rather than teaching for knowledge change.

As shown in Table 7i, most of the teachers across the districts agreed that the training was relevant to teaching the Scholastic lessons. Fewer, though still a majority, felt that the training improved their ability to teach the lessons, and about one-half thought the training was

necessary for teaching the lessons. In interviews, some teachers expressed the opinion that the training focused too much on teaching methods and not enough on providing them with more information on nutrition. This suggests that future training efforts either concentrate more on providing nutrition information or explain that the methods for teaching for behavior change are different and attention to teaching approach is important to success.

**Table 7i. Teacher Opinions of Training for Implementing the Scholastic Module (Posttest Percentages): All Districts; All Grades**

Opinions	Percent Agreed
The training was relevant to teaching the lessons.	87
The training was necessary for teaching the lessons.	49
The training improved your ability to teach the lessons.	58
N (number of teachers completing questionnaires)	(120)

## 7.6 LESSONS LEARNED

**Every site faced implementation hurdles—some were common to each site, others were unique to a particular site. Hard work made the pilot implementation successful, but the roll out of Team Nutrition will be smoother if districts heed the lessons learned by the four pilot project sites.** Not every lesson learned will be applicable for every site, but knowing what other sites have encountered and overcome should facilitate implementation. Based on observations and interviews in the pilot communities, the following consistent themes appear to facilitate successful implementation:

- **Establish a team management style.** Recognize the amount of effort required and establish a team approach to task completion early in the project. This

- **Get everyone on board.** When implementing school-based activities, work in conjunction with teachers and food service personnel. This team approach ensures that the nutrition messages reinforce those that are provided in the classrooms and that all personnel are aware of the objectives of these activities. In addition, centralized assistance to teachers from cafeteria staff or parent volunteers in assembling materials and supplies may facilitate implementation.
- **Focus attention on parent involvement strategies.** Greater exploration and utilization of parental involvement are needed to enhance parental participation in nutrition-related activities with their children and improve their overall knowledge of healthy nutrition habits. For example, making Spanish-language materials available may increase parental involvement (especially at home, where parents tend to be more involved than at school or community events).
- **Provide training or technical assistance to administrators.** If possible, provide training or technical assistance on media advocacy to the district representatives interested in implementing Team Nutrition. Also, building community partners and engaging the community in this type of project require knowledge and skills related to coalition building and how to approach potential partners.
- **Allow enough time for planning and development activities.** To minimize any concerns about having enough time to teach the basic academic subjects on which students are tested and teachers evaluated, it is important to determine, prior to implementation, how the lessons may be successfully integrated with existing academic curricula. Sufficient time is needed to establish communication links between teachers and food services. Time also is needed to plan, schedule, and build community partnerships (e.g., chefs, media, and businesses).
- **Add physical activity component.** Recognize the connection between health, food consumption, and physical activity, and support development of a physical activity component to link to Team Nutrition as recommended in the Scholastic modules.
- **Capitalize on established networks, contacts, and events.** Establish a rapport with several community partners to facilitate integration of Team Nutrition into their district. Involvement in professional and community organizations can assist in leveraging resources and generating ideas in support of school-wide health initiatives. For example, one TNC's participation on a board resulted in its TN support.
- **Provide coordination for obtaining relevant materials and supplies.** Schools and districts should be prepared to provide assistance to teachers in assembling materials and supplies for classroom lessons. Teachers need resources or materials that will provide them with background information on nutrition, particularly if they have not taught nutrition before.

- **Be flexible.** In schools where teachers team-teach according to specific academic areas, it may be more effective if the teachers select specific activities from the lessons that are relevant to the subjects they teach rather than attempt to teach entire lessons. It is important to determine, prior to implementation, how the lessons may be successfully integrated with existing academic curriculum. This may minimize any concerns about sufficient time for teaching the basic academic subjects.

## **TECHNICAL APPENDIX**

## **INTRODUCTION**

The process evaluation of the Team Nutrition (TN) Pilot Implementation Project included a number of data collection efforts designed to document how the program was implemented in the seven pilot communities. These efforts were conducted before, during, and after the Phase I implementation of the program in the spring of 1996.

As described in Chapter 1, the pilot project included seven school districts. The process evaluation was conducted at two levels in these communities:

- The four communities selected for the outcome evaluation – Des Moines, Hamblen County, Tulsa, and Vacaville – were the subject of an intensive process evaluation, which included two site visits by evaluation staff to each community, activity logs to document activities, telephone surveys, teacher and cafeteria observations, and teacher, student, and parent surveys.
- The other three communities – Lawrence, Passaic, and Cleveland – were the subject of a basic process evaluation that included a subset of the evaluation activities conducted in the intensive process communities.

This technical appendix describes in detail the data collection efforts conducted at each level of the process evaluation.

## **STUDY DESIGN**

In the intensive process evaluation districts, Des Moines and Tulsa each implemented the TN program in 4 schools, while Hamblen County and Vacaville each implemented it in 2 schools. Thus, a total of 12 schools in these districts participated in the pilot. In each of these schools, the program was implemented in three grades.

In the basic process evaluation, Lawrence implemented the program in three schools, while Passaic and Cleveland each implemented the program in two schools. In Lawrence, the program was only implemented at one grade level; Passaic and Cleveland each implemented the program in three grades.

# **PROCESS DATA COLLECTION ACTIVITIES AND INSTRUMENTS**

## **INTENSIVE PROCESS EVALUATION**

The purpose of the intensive process evaluation was to examine the extent of nutrition activities in pilot implementation communities, to provide qualitative information on the program which would be used to assist other communities interested in implementing Team Nutrition guidelines, and to inform the outcome analysis. As noted above, the intensive process evaluation involved data collection efforts before, during, and after the Phase I intervention. These efforts are described in the sections that follow.

### ***Data Collection Prior to the Intervention***

The data collection prior to the intervention included documents submitted by the school districts, in-person interviews conducted during the initial site visit, and surveys conducted in association with the outcome evaluation.

#### ***Documents Submitted by the School Districts***

The process evaluation included the review of several documents that the districts provided as part of their participation in the pilot project:

- The application for participation in the pilot, which provided information on the school district and the schools being considered for inclusion in the pilot.
- The implementation plan, which detailed plans for meeting specific pilot program requirements.
- A planning diary, which was distributed at the planning meeting in November and used by the districts to document planning activities.

#### ***Data Collection During the Initial Site Visit***

Site visits were conducted at each intensive evaluation district prior to the Phase I implementation to familiarize the evaluation staff with each of the communities, to facilitate communication with the districts, and to collect information on program planning and support from school principals/administrators.

### Team Nutrition Coordinator Interviews

This instrument for this in-person interview was designed to obtain information on the TN planning process, baseline information on the project's objectives with respect to implementing nutrition education interventions, and activities from the individuals responsible for developing and implementing the plan.

A total of four interviews took place (one in each of the intensive process communities) prior to implementation. The interviews were conducted on site with the district TNC or other appropriate school administrators in treatment communities and lasted approximately 1 hour.

Information collected using this guide was used to describe each district's planning process. This information was useful in identifying planning procedures collected at the end of implementation regarding the success of each project in attaining its implementation activities. Information regarding project implementation activities collected during this interview was used as baseline information to assess the project's success in conducting those activities and any changes that occurred during the course of implementation.

### School Principal/Administrator Interviews

This instrument was designed to obtain information from school administrators to assess their level of involvement and commitment to the TN project at its onset. It also introduced the school administrators to the evaluation process and answered their questions about this process.

The instrument was used to collect information on the involvement of the principal and the school in the TN planning process, the knowledge of the principal regarding the evaluation process, the attitudes of the principal toward the TN project, and the level of commitment to the project.

Principals/school administrators at each of the treatment schools were interviewed on site for a total of 12 interviews. The interviews lasted approximately 30 minutes.

### Cafeteria Visits

During the initial site visit, evaluation staff also spent time in each school cafeteria to meet the food service staff and to familiarize themselves with cafeteria operations. This familiarity

informed subsequent interviews with cafeteria staff, the TNCs, and the teachers implementing the program.

#### *Data Collected as Part of the Outcome Evaluation*

Several of the instruments designed to assess the outcomes of the TN pilot also included items relevant to the process evaluation. These included teacher, student, and parent surveys.

#### Teacher Surveys

All of the teachers implementing the TN programs completed self-administered surveys during the teacher training. Items relevant to the process evaluation included teacher attitudes toward teaching nutrition. A total of 94 intervention teacher surveys were completed in the intensive process sites at baseline.

#### Parent Surveys

All schools in the intensive process districts implemented the program at the fourth grade level to facilitate the outcome evaluation. As part of this evaluation, parents of all fourth grade students were surveyed by telephone regarding their nutrition, knowledge, attitudes, and behaviors. Included among these items was a measure of the importance of nutrition education. A total of 632 surveys were conducted with intervention parents in the intensive process sites at baseline.

#### Student Surveys

The fourth grade students in the intensive process districts were also surveyed in the classroom to assess their skill-directed nutrition knowledge, their motivation to choose healthy foods, and their nutrition behavior. There were 758 student surveys completed in the intervention schools in the intensive process sites at baseline.

#### Cafeteria Observations

These observations provided information on the degree to which the cafeterias followed recipes and used healthy food preparation practices. These observations were conducted

using a structured protocol by field staff who conducted the food selection/plate waste observations.

### ***Data Collection During the Intervention***

A number of data collection efforts also took place during the Phase I implementation. Primary among these were the activity logs completed for the required core activities and the lessons taught by implementing teachers.

#### *Activity Logs*

##### Team Nutrition Core Activity Log

The TN Core Activity Log was designed to collect basic process information on the core nutrition activities. Information on the following variables for each core activity conducted was collected:

- Type of activity.
- Date of activity.
- Duration of activity.
- Materials used.
- Audience/Population.
- The amount of time and materials required by school and community.
- Community partner involvement.

Due to the relatively small number of core activity logs received (18 per site), data from the core activity logs were not presented separately in the case study report. Instead, information from the core activity logs was used to supplement descriptions of the school-wide and community events and information obtained in one-on-one interviews. In addition, reported information on the time and materials was not deemed reliable and therefore was not reported.

### Team Nutrition Teacher Activity Log

The teacher activity logs were designed to track implementation of the Scholastic lessons and captured information for each lesson on:

- The date and duration of the lesson.
- The activities included as part of the lesson.
- The materials used in the delivery of the lesson.
- The amount of time and resources (\$) from district and school staff.
- The amount of time and resources (\$) from community partners.

To maximize the return rate for the activity logs, followup phone calls were conducted to prompt both the TNCs and the teachers to complete and return any outstanding logs. While it is not possible to distinguish lessons which were not conducted from lessons for which logs were not completed, interviews with teachers suggested that logs were completed for nearly all of the lessons conducted. As a result, there was a high rate of return for the teacher activity logs. A total of 754 teacher activity logs were received and processed in the four intensive process sites. Data from the teacher activity logs are presented in each of the case study reports and are used to describe the implementation of the Scholastic curricula and other classroom activities. Again, information on the time and materials was not deemed reliable and therefore was not reported.

Prior to the start of implementation, each district TNC received:

- TN Core Activity Logs.
- Teacher Activity Logs.
- Instruction sheets.
- Approximately 20 envelopes preprinted with Prospect's address (to facilitate timely return of logs).

Instructions for completing both the core and teacher activity logs were included with the activity logs. In addition, a section of the teacher training was devoted to instructing teachers on the correct method for completing the logs.

To increase the accuracy and reliability of the logs, the district TNCs were responsible for reviewing the forms for accuracy and completeness. They then forwarded completed logs to

Prospect. Upon receipt of the logs, evaluation staff coded and edited the information. The data were then entered into two databases—one for the teacher activity log and another for the core activity log. The data were then cleaned by use of computer edits and exploratory data analysis.

#### *Team Nutrition Coordinator Telephone Interviews*

The instrument for this interview was designed to monitor the implementation of the TN project. The interview collected information on the ongoing implementation of each project objective, including objectives pertaining to classroom interventions, school-wide activities, parental involvement, food-service operations, community partnerships, training (other than teacher training), and mass media coverage. The instrument also clarified any questions the evaluation staff had regarding the activity logs completed by the TNC and the teachers.

The district TNCs in the intensive evaluation districts were interviewed biweekly. A Prospect staff member conducted the interviews by telephone, and they lasted approximately 15-30 minutes. This monitoring process was important because it captured information about the implementation process as it occurred rather than relying on respondent recall during the second site visit.

#### *Teacher Observations*

To assess fidelity to the Scholastic materials and the teacher training, each of the fourth grade teachers in the implementing schools was observed teaching at least one activity from one of the first three Scholastic lessons. These observations were conducted using a structured observation form and provided information on whether teachers used the appropriate materials, encouraged interaction among students, and implemented the activities as instructed. The observations were conducted by consultants who participated in the teacher training.

#### *Documents Submitted by the Districts*

The quarterly reports submitted by the implementing districts to the USDA/FCS also provided information on the ongoing program implementation efforts.

### ***Data Collected After the Intervention***

A number of interviews were conducted after the intervention as part of a second site visit to each community, as well as part of the outcome evaluation surveys.

### ***Data Collected as Part of the Second Site Visit***

The second site visit was conducted immediately after the completion of Phase I activities. It included interviews with a number of key participants in the TN Pilot Implementation Project.

### **Team Nutrition Coordinator Interviews**

The information collected from this instrument, in conjunction with information from the TNC initial site visit interview and the TNC telephone interviews, served as the general framework for assessing the success of the districts (and schools) in implementing their project plans. It was designed to collect information on the success of the project in achieving its initial objectives, changes in objectives during the course of the project, and barriers and facilitators to attaining objectives. A similar set of questions was asked for each TN activity. The interviews were conducted on site and lasted 1 to 1.5 hours.

### **Teacher Interviews**

The purpose of this instrument was to obtain in-depth information about the process of implementing the classroom interventions and the teachers' attitudes on and perceptions of the Scholastic modules. The instrument was designed to collect information about how the Scholastic modules were implemented, how they were received, the teachers' perceptions of the materials, and general perceptions of the TN effort.

A total of 37 teacher interviews with fourth grade teachers were conducted during the four site visits. Two fourth grade teachers were not interviewed in Des Moines because of a scheduling conflict. The interviews were conducted on site and lasted about 30 minutes.

### **Community Partner Interviews**

The purpose of this instrument was to obtain information from community partners on their involvement with the TN project and the implementation of specific activities or events. The instrument was designed to collect information about how the relationships with Team Nutrition

were established, specific events or activities with which the community partners were involved, how decisions were made regarding those events or activities, barriers and facilitators to implementing events or activities, and satisfaction with the partnership relationship.

Eleven community partners were interviewed during the second site visits. While the original intent was to interview four community partners per site, difficulties in scheduling and the lack of established relationships with community partners in some districts resulted in an average of three community partner interviews per site.

Community partner interview subjects were nominated by the TNC during the initial site visit. The interviews were completed on site and lasted approximately 30 minutes.

The interviews provided important information for understanding the procedures, resources, barriers, and facilitators encountered when community agencies or organizations developed collaborative relationships with local school systems.

#### Food Service Staff Interviews

The involvement of food service staff and changes in the food service system were critical components of the implementation process. The purpose of this instrument was to gather the perceptions and attitudes of food service workers on the implementation of the TN initiative (classroom, school, and district activities) and assess their level of involvement, their plans to meet the new dietary guidelines, and their plans for food service training. The instrument collected information on the level of involvement of food service staff in the TN effort, their perceptions of the training they received, the food service changes that were made, and the individuals involved in making those changes.

Interviews with school food service staff were scheduled for the second site visit interview at the end of the Phase I implementation. The interview was primarily designed to be administered to school food service staff including the school food service director and one cafeteria line worker. However, in the one instance (Tulsa) where the district food service coordinator was not the district TNC, this interview guide was also used to interview the district food service director.

Before scheduling interviews with the school food service line worker, Prospect staff asked the school food service director to identify a member of their staff who had experience

implementing nutrition education and/or was active in cafeteria operations to be interviewed. Interviews took place on site and lasted approximately 30 minutes. The school food service director and one line worker were interviewed in each school.

#### *Data Collected as Part of the Outcome Evaluation*

As with the pre-intervention data collection, the posttest instruments from the outcome evaluation also included items relevant to the process evaluation. These included teacher, student, and parent surveys.

#### Teacher Surveys

The teachers implementing the TN program completed self-administered surveys during the second site visit. Items relevant to the process evaluation included teacher evaluations of the training and of the Scholastic materials. Ninety-three intervention teachers in the intensive process sites completed surveys after the intervention.

#### Parent Surveys

The posttest surveys of fourth grade parents included items on parent use and opinions of Scholastic take-home materials, awareness of Team Nutrition through the media, and awareness of and participation in TN activities. A total of 567 telephone surveys with intervention parents in the intensive process sites were completed at posttest.

#### Student Surveys

The posttest surveys of fourth grade students included items on recall of nutrition activities and of TN PSAs. Surveys were completed with 699 intervention students in the intensive process districts after the intervention.

#### Cafeteria Observations

Just as at baseline, cafeteria observations were conducted to inform the food selection/plate waste analysis that was part of the outcome evaluation. These observations provided information on changes in preparation practices during the implementation period. Again, these were conducted at each school.

## **BASIC PROCESS EVALUATION**

The basic process evaluation was conducted in the three districts not selected for the outcome evaluation — Lawrence, Passaic, and Cleveland. This evaluation did not include site visits or observations. It did include activity logs, telephone interviews, and documents provided by the districts as described below.

### ***Data Collection Prior to the Intervention***

The data collection prior to the intervention included documents submitted by the school districts, in-person interviews, and the teacher surveys conducted during teacher training. No site visits were conducted. Thus, there was no formal TNC interview prior to the intervention. The basic process districts also did not participate in the student and parent surveys that were part of the outcome evaluation.

### ***Documents Submitted by the School Districts***

Just as for the intensive process districts, the basic process evaluation included the review of several documents that the districts provided as part of their participation in the pilot project:

- The application for participation in the pilot, which provided information on the school district and the schools being considered for inclusion in the pilot.
- The implementation plan, which detailed plans for meeting specific pilot program requirements.
- A planning diary, which was distributed at the planning meeting in November and used by the districts to document planning activities.

### ***Teacher Surveys***

All of the teachers implementing the TN programs completed self-administered surveys during the teacher training. Items relevant to the process evaluation included teacher attitudes toward teaching nutrition. Forty-five teachers in the basic process districts completed surveys prior to the intervention.

***Data Collection During the Intervention***

The basic process districts completed activity logs, and the TNCs were interviewed by telephone during the intervention. No teacher observations were conducted.

*Activity Logs*

Team Nutrition Core Activity Log

Basic process districts completed core activity logs just as the intensive ones did. However, like the intensive process districts, due to the relatively small number of core activity logs

report. Instead, information from the core activity logs was used to supplement descriptions of the school-wide and community events and information obtained in one-on-one interviews.

Team Nutrition Teacher Activity Log

### ***Data Collected After the Intervention***

No site visits were conducted after the intervention in the basic process communities. However, the TNCs were interviewed by telephone using the guide used to interview them on site in the intensive process communities.

### ***Teacher Surveys***

The teachers implementing the TN program completed self-administered surveys after the implementation. These were administered in group settings by the districts or schools themselves. Twenty-seven teachers in the basic process districts completed the teacher surveys after the intervention.

## **CONDUCTING THE PROCESS DATA COLLECTION**

### **PILOT TESTING**

To assess how potential interviewees would respond to the process interview guides developed for the TN Pilot Implementation Project, several interview guides were pretested. However, because the Initial and Second Site Visit Interview Guides with TNCs were very specific to program implementation, it was decided that it would be difficult to perform a valid pilot test in sites that were not directly involved in the TN Pilot Implementation Project. As a result, that interview guide was not pilot-tested.

The pilot tests were conducted to examine how well respondents understood the questions, the relevance of respondent response to the objective of the questions, the usefulness of the question to the study objective, and the clarity of the wording of the question. Results of the pilot test were incorporated into the final data collection instruments.

### **STAFF**

All of the in-person and telephone interviews were conducted by Prospect staff and contract consultants. One Prospect staff member conducted all of the initial site visit interviews. Prospect staff supervising the food choice/plate waste were used to interview food service staff during the second site visit. These staff received interviewer training before their field visit.

## **ADVANCE LETTERS**

Interview subjects were identified and contacted by telephone to schedule an interview.

Following the phone call, subjects were sent an advance letter that included the following:

- A request to participate in the interview and an explanation of why they have been selected to be interviewed.
- A description of the general topic and purpose of the interview.
- A brief description of the subjects that will be covered during the interview.
- An estimate of the duration of the interview.

## **APPENDIX A: MODULE EXPLANATIONS**

## MODULE 1: FOOD AND ME—PRE-K AND KINDERGARTEN

This module was developed to provide an overview of nutrition and help young children adopt better eating behaviors such as eating a variety of foods; increasing their fruit, vegetable, and grain intake; and choosing more low-fat foods. Each of the nine lessons begins with the children's own experiences with food and then builds onto that knowledge by providing a basic understanding of why and how better food choices will help them grow and learn. The following six fundamental themes are carried throughout the nine lessons:

- *The Cycle of Life: We feed the earth and the earth feeds us.*
- *Nutrition Guidelines: We can use nutrition tools, such as the Food Guide Pyramid, to help us make food choices for a healthy diet.*
- *In-School Nutrition: We can introduce children to new foods and to a variety of foods as part of school meals and cooking experiences.*
- *Children as Advocates: We can empower children to make food choices for a healthy diet.*
- *Children Can Take Responsibility for Their Own Health: By tracking their choices, children and families can set goals for healthy eating and fitness.*
- *Food is Fun To Make and Eat: Children can learn how food is prepared and sample a variety of foods.*

The following is a listing of the available lessons in the module, along with a short description of each.

- *All Kinds of Foods Help Us Grow and Learn! Shape healthy attitudes toward food with language, art, math, and cooking activities that teach children why eating different foods in the right amounts is important.*
- *Where Do Foods Come From? Explore with children the important role of plants in the Food Guide Pyramid through activities that connect to science, art, language, and social studies.*
- *We Can Grow a Garden. Let children see firsthand how food grows while they make literature, music, and ecology connections.*
- *All About Foods and Seasons. Complete your focus on the cycle of life with science, social studies, and cooking activities that deal with seasonal foods and the variety of foods we eat.*

- *Using Our Senses To Learn About Food. Try these sensory activities that draw on language, science, and creative skills as children focus on the sight, sound, smell, taste, and texture of food.*
- *The Wonderful World of Food. Use these “delicious” picture books and related cooking and language connections to help children see similarities and differences in foods across cultures.*
- *Let’s Celebrate With Food! Explore with children the role of food and eating in many special events with three picture books and related social studies, dramatic play, and cooking activities.*
- *Food Is Fun To Make and Eat! Sample these recipes and cooking activities for all ages and stages.*
- *Food Gives Us Energy To Move! Stay healthy and fit with music-and-movement activities for young bodies.*

## MODULE 2: FOOD TIME—GRADES 1 AND 2

This module aims to empower first and second grade students to choose a variety of foods; eat more grains, vegetables, and fruits; and construct a diet lower in fat. Each of the eight lessons engages the students' interest with a start-up section, followed by a few activities, and a wrap-up section. Two additional activities, *Lunchroom Link* and *Home Connection*, are included in each lesson to expand learning into the cafeteria and students' homes. Each teacher's kit includes the following for integration into the lessons:

- Teacher's Guide
- Student Reproducibles
- Student Magazines
- Family Newsletter
- Parent Reproducibles
- Video
- Posters
- Student Portfolio
- Family Connection

The following is a list of lessons found in Module 2, along with a short description of each:

- *Food Grows. Science and language arts activities help children investigate where food comes from.*
- *Fabulous Fruits, Various Vegetables. Children practice their language arts, math, and science skills when they keep fruit and vegetable diaries and host a tasting party.*
- *All Aboard the Grain Train. Learning about the grain-to-flour process and keeping track of their daily consumption of grain-based foods helps children to make cross-cultural connections and develop math and language arts skills.*
- *Pyramid Power. The USDA's Food Guide Pyramid is the basis for language arts, math, and art activities that promote choosing foods for a healthy diet.*
- *We Are What We Eat. Children use language arts and art to creatively continue their examination of the Food Guide Pyramid and their own diet.*
- *Buddy's Restaurant. These language arts activities, based around an imaginary restaurant, create opportunities for healthy, pyramid-based menu planning.*

- *Tasty Travels. Food-tasting experiments combine science skills with multicultural studies as students explore the foods of other countries to achieve a more varied diet.*
- *The Great Nutrition Adventure. Language arts skills are put to work as students organize a food fair and a class recipe book to showcase all they have learned.*

### **MODULE 3: FOOD WORKS—GRADES 3, 4, AND 5**

Module 3 is similar to Module 2 in its objectives; however, the material is geared toward third, fourth, and fifth grade students. The lessons emphasize choosing a variety of foods; eating more grains, vegetables, and fruits; and constructing a diet lower in fat. Each of the eight lessons engages the students' interest with a start-up section, followed by a few activities, and a wrap-up section. Two additional activities, *Lunchroom Link* and *Home Connection*, are included in each lesson to expand learning into the cafeteria and students' homes. Each teacher's kit includes the following for integration into the lessons:

- Teacher's Guide
- Student Reproducibles
- Student Magazines
- Family Newsletter
- Parent Reproducibles
- Video
- Posters
- Student Portfolio
- Family Connection

The following is a list of lessons found in Module 3, along with a short description of each:

- *Food Grows. Science and language arts activities help children investigate where food comes from.*
- *Bodies Grow. Students use their art skills to illustrate the benefits of a healthy lifestyle and practice math skills when they estimate and measure serving sizes.*
- *Read All About It. Students use language arts and art to create newspaper articles based on their knowledge of the Food Guide Pyramid and their own diets during a 24-hour period.*
- *Label Lowdown. The new Nutrition Facts food labels are the basis for language arts and math activities that promote choosing foods for a healthy diet.*
- *Fat Facts Feature. Students navigate the fat content of foods and draw conclusions based on information they have gathered during activities that utilize language arts and math skills.*
- *Sense-ational Food. Students use their language arts skills to compile an anthology of new foods and science skills during sensory experiments.*

- *The World on a Plate. Social studies and language arts skills are emphasized as students research their own cultural heritage and explore the foods of other countries to achieve a more varied diet.*
- *The Great Nutrition Adventure. Language arts skills are put to work as students organize a food fair and a class recipe book to showcase all they have learned during Food Works.*