

# Focus on Food: Development of the *Cooking with Kids* Experiential Nutrition Education Curriculum

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## INTRODUCTION

Traditional methods of delivering nutrition education emphasize knowledge acquisition;<sup>1</sup> however, hands-on experience with food is an engaging and effective strategy to teach healthful eating behaviors.<sup>2,3</sup> The Centers for Disease Control and Prevention *Guidelines for School Health Programs to Promote Lifelong Healthy Eating* recommend that school-based nutrition education programs use developmentally appropriate and culturally relevant activities, emphasize active learning and fun, and employ social learning techniques.<sup>4</sup>

The *Cooking with Kids* curriculum was developed to support experiential food and nutrition education in elementary schools. Inspired by food acceptance<sup>5,6</sup> and nutrition education research,<sup>7,8</sup> *Cooking with Kids* lessons encourage children's innate curiosity and enthusiasm for food through direct experience with fresh, affordable foods.

## PROGRAM DESCRIPTION

*Cooking with Kids* began in 1995 as an outgrowth of a student nutrition advisory council's work to improve school meals. The educational objectives of *Cooking with Kids* are that elementary school children will (1) explore a variety of healthful foods from diverse cultures, (2) acquire practical food preparation skills, (3) work cooperatively, (4) practice applied learning across the curriculum, and (5) connect classroom learning with school meals. Each student receives a 1-hour introductory lesson, five 1-hour fruit and

vegetable tasting lessons, and five 2-hour cooking lessons annually. *Cooking with Kids* school lunches, adapted from classroom lessons for cafeteria use, are served an average of twice a month in all district elementary school cafeterias, providing a link between classroom learning and cafeteria meals.

*Cooking with Kids* currently reaches 4400 elementary school students in 12 public schools in Santa Fe, NM, which has a predominantly Hispanic population and district-wide average of 65% of students qualified to receive free or reduced-price school meals. Eleven hours of cooking classes are delivered by trained *Cooking with Kids* food educators. Classroom teachers deliver 5 hours of fruit and vegetable tasting lessons. Annually, over 1200 family members participate as volunteers in cooking classes.

## CURRICULUM DEVELOPMENT

The curriculum has been developed and refined over a 12-year period. Initially it consisted of simple recipes that emphasized flavors from around the world, using fresh, affordable foods and healthful cooking methods. The experience of teaching cooking classes and teacher and administrator feedback led to development of a formal nutrition education curriculum. Concurrently, the school district department of curriculum and instruction mandated teaching across the curriculum. In addition, as the school district's emphasis on language arts

and math literacy became more focused, *Cooking with Kids* collaborated with classroom teachers to encourage use of *Cooking with Kids* curriculum materials as literacy tools for shared reading, guided reading, interactive writing, and applied math activities.

The *Cooking with Kids* bilingual Spanish/English curriculum is tailored to the developmental needs of children in grades K and 1, grades 2 and 3, and grades 4-6. The curriculum contains lesson plans, food and nutrition information, classroom recipes, discussion questions and vocabulary words, maps, plant drawings, writing and drawing activities, and take-home family recipes. Cooking lessons emphasize food from cultural traditions across the globe (Table 1). Recipes include Asian noodles, black bean tostadas with salsa fresca, vegetable tamales, minestrone with breadsticks, and East Indian lentils with carrot rice pilaf. Each cooking lesson is aligned with state academic standards (Table 2) and provides applied learning opportunities in language arts, social studies, math, science, and health education. The curriculum contains maps, which are used to locate the origin of food used in each lesson. Students practice math skills through measuring, use fractions in dividing dough, and learn science concepts by observing cooking processes. *Cooking with Kids* lessons provide opportunities for learning skills that are unfamiliar to many children: working cooperatively, eating together, practicing manners, listening to music, and sharing conversation at the table. Practicing these social skills is an integral part of *Cooking with Kids*.

Fruit and vegetable tasting lessons were developed as easy-to-implement nutrition education tools for classroom teachers, requiring minimal food preparation and no cooking. Each tasting lesson engages students in sensory exploration of 4 types of

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descriptive language, and express personal food preferences.

## EVALUATION

This curriculum has been field tested over a 12-year period, with process evaluation documenting success stories, challenges, and needs for refinement. Classroom teachers and principals are surveyed each year about the curriculum. As a school-based evaluation (not requiring Institutional Review Board approval), survey results suggest positive impact and educational value of the curriculum and inform ongoing curriculum development. In 2006-2007, responding teachers (165) reported that students learn about healthful food (98%) and learn to be interested in new foods (93%) through the curriculum; in 2007-2008, 96% of responding teachers (66) reported that they would recommend *Cooking with Kids* to other educators. Through repeated family surveys, parents have expressed surprise and delight that their children are eating a variety of foods in cooking and tasting classes, especially vegetables. A formal research study, funded by USDA CSREES NRI project no. 2007-05062, is underway

**Table 1.** *Cooking with Kids* Lessons for Grades K-6<sup>a</sup>

2-Hour Cooking Lessons	1-Hour Fruit and Vegetable Tasting Lessons
Vegetable Paella with Green Salad	Exploring Healthful Foods
Stovetop Pizza with Tri-color Salad	Melons
Fresh Green and White Fettuccine with Tomato Basil Sauce and Salad	Tomatoes Grapes and Raisins
Potato Pancakes with Homemade Applesauce	Apples
Llapingachos (potato dish from Ecuador) with Red Chile Sauce	Pears
Black Bean Tostadas with Salsa Fresca	Root Vegetables
Vegetable Tamales with Red Chile Sauce	Dried Fruit
Chinese American Fried Rice with Sweet and Sour Cucumbers	Citrus Fruit
Asian Noodles with Coconut Rice Balls	Salad Greens
Middle Eastern Falafel, Flatbread, and Tomato Cucumber Salad	Peas
East Indian Lentils with Carrot Rice Pilaf, Chapatis, and Fruit Salad	
Ethiopian Lentils with Injera Bread	
North African Tajine with Couscous and Flatbread	

<sup>a</sup>Recipes for grades K and 1 may be simplified.

fruits or vegetables (Table 1). For example, the salad tasting lesson includes romaine lettuce or salad mix, red cabbage, sunflower sprouts, and

baby spinach. Tasting lessons encourage students to learn about and enjoy fresh fruits and vegetables, observe and draw the fruits or vegetables, use

**Table 2.** *Cooking with Kids* Lessons Meet Academic Standards across the Curriculum<sup>a</sup>

Content Area	Content Standard	<i>Cooking with Kids</i> Activities	Tasting Lessons	Cooking Lessons
Language arts	Apply strategies and skills to comprehend information that is read, heard, and viewed.	Read food information and follow recipes.	X	X
Language arts	Acquire reading strategies.	Read food information and recipes.	X	X
Social studies: geography	Understand how physical, natural, and cultural processes influence where people live, the ways in which people live, and how societies interact with one another and their environments.	Read food history and use map activity.		X
Mathematics	Understand numerical concepts and mathematical operations.	Divide dough using fractions.		X
Mathematics	Understand measurement systems and applications.	Measure ingredients.		X
Mathematics	Understand how to formulate questions, analyze data, and determine probabilities.	Create bar charts from student food choices.	X	
Science	Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.	Observe liquid changing to gas in cooking.		X
Health education	Comprehend concepts related to health promotion and disease prevention.	Read nutrition facts and explore healthful food choices.	X	X
Health education	Demonstrate the ability to practice health-enhancing behaviors and reduce health risks.	Practice food preparation and selection skills with real food.	X	X

<sup>a</sup>Standards shown here are a sample of standards for grades 4-6.

to determine the impact of *Cooking with Kids* on students' preferences for fruits and vegetables and cooking attitudes and self-efficacy. This Institutional Review Board–approved study will guide further refinement of the curriculum and support development of dissemination materials.

## SUMMARY

The *Cooking with Kids* curriculum blends traditional nutrition education with hands-on experience and academic learning. Stakeholder feedback has been a critical component of *Cooking with Kids* curriculum development. Students, parents, classroom teachers, and school administrators have consistently expressed enthusiastic support for *Cooking with Kids* and provided valuable suggestions to enhance the curriculum. Hands-on nutrition education curricula that focus on food exploration and cooking provide positive experiences with a variety of foods. These curricula encourage and support healthful dietary behaviors among children and families.

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*Cooking with Kids* provides downloads of fruit and vegetable tasting lessons at no cost, and offers cooking curriculum and school lunch recipes for cafeteria use for a fee at: [www.cookingwithkids.net](http://www.cookingwithkids.net).

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