

INTERVENTION

The Kindergarten Initiative

The Food Trust
Philadelphia, PA



INTENT OF THE INTERVENTION

The Kindergarten Initiative (KI) is a practice-based intervention designed to promote healthy eating habits in kindergarten students, through nutrition and agriculture education, school snacks from local farms, and parent engagement activities.

The Kindergarten Initiative is a school-based program that focuses on the individual/interpersonal level of the socio-ecologic model (children and their parents/caregivers), with a secondary focus on the organizational level (local farms and schools).

OVERVIEW

Created with the goal of increasing consumption of fruits and vegetables and providing a new market for farmers, *The Kindergarten Initiative (KI)* takes an integrated, holistic approach to educating children about food and how it grows. Lessons integrating nutrition and healthy habits were developed to fit Pennsylvania educational standards; however, they can be adapted to meet the educational standards for other states. Learning how food grows and who grows it in combination with frequent food tastings may help increase fruit and vegetable consumption among young children.

The Kindergarten Initiative has 3 key components:

1. **Serving locally grown, healthy snacks** to kindergarten students in the classroom two to three times a week
2. **Integrating nutrition and local food/agriculture education into the standard core curriculum**, including identification of fruits and vegetables, learning about healthy snacks and understanding that food comes from a farm
 - KI instructional activities include a) students taking seasonal field trips to local farms two to three times a year to learn about the local food system, b) teachers conducting activities about growing food in the classroom and in school gardens, and c) students participating in nutrition lessons in the classroom
3. **Partnering with parents/caregivers** by providing/arranging for:
 - cooking demonstrations, including some for parents only and some for parents and children
 - newsletters about what children are learning and about upcoming events
 - supermarket tours
 - mini-farm store — parents are invited to order a variety of local, seasonal foods several times during the school year (like a book club order form) and local farmers supply the produce

Intended population: kindergarten students and their parents

Secondary Audience: teachers, farmers and administrators

Setting: Preference given to schools located in areas where a high percentage of children are eligible for free and reduced-price school meals.

Length of time in the field: *The Kindergarten Initiative* began as a yearlong pilot study in four Philadelphia schools during the 2004-2005 school year. During the following school year (2005-2006), the *Kindergarten Initiative* added six new schools. As a result of the pilot study, in 2006, the Pennsylvania General Assembly passed the **Healthy Farms and Healthy Schools Program Act** and appropriated state funds to support a grant program for local schools to implement the *Kindergarten Initiative*. In the first year of the HFHS program (2007-2008), 46 schools received state funding. The following year 53 schools received funding. The program has also been replicated in Massachusetts, Missouri, and New Jersey and continues to be implemented in schools in Pennsylvania. To read the **Healthy Farms and Healthy Schools** legislation, go to the *Intervention Materials* section of the template.

HEALTH EQUITY CONSIDERATIONS

The Kindergarten Initiative (KI) is designed to promote healthy eating habits in kindergarten students, through nutrition and agriculture education, school snacks from local farms, and parent engagement activities. The Kindergarten Initiative (the program) and **Healthy Farms and Healthy Schools Act** (the Pennsylvania state-wide policy) give preference to schools located in areas where a high percentage of children are eligible for free and reduced-price school meals. At the time of the review, 53 schools statewide participated in the program. The intended audience for the program and policy is kindergarten students and their parents and was created with the intention of serving students and parents in low-income schools. The Kindergarten Initiative has also been adopted in schools in Missouri, New Jersey, and Massachusetts.

CORE ELEMENTS

This section outlines the aspects of an intervention that are central to its theory and logic and that are thought to be responsible for the intervention's effectiveness. Core elements are critical features of the intervention's intent and design and should be kept intact when the intervention is implemented or adapted.

Kindergarten teachers and farmers are the essential program drivers. Without their support and early commitment, the program is unable to reach parents and children.

1. **Select schools to recruit.** The first task in setting up a KI program is to choose schools that would benefit from the program. In selecting schools, consider giving preference to schools located in areas where a high percentage of children are eligible for free and reduced-price school meals.
2. **Write proposals and apply for funding.** To get started, schools should look to external sources for grant funding; community organizations may be willing to fund program costs. Various websites provide information about the availability of grants. Because KI is a farm to school program, it has broad appeal that extends to supporters of education, health, and agriculture.
3. **Work with district administrators/school board/teachers to adapt the curriculum to create a standards-based framework** for teaching nutritional and local farming concepts to kindergarteners. A curriculum alignment plan integrates nutrition and agriculture education into regular core-curriculum lessons and enables teachers to more easily integrate the key concepts.

4. **Identify and recruit local farmers to:** a) supply and deliver products to schools for snacks, b) host field trips that connect children to growing and the local farm system and c) supply fruits and vegetables to fill orders for the kindergarten farm store.
5. **Train and provide ongoing support to kindergarten teachers.** Training and the use of KI educational materials shared by The Food Trust allow kindergarten teachers to integrate nutrition, agriculture and physical activity into their curricula. The Food Trust recommends that teachers aim to teach these lessons at least 8 hours per month.
6. **Promote test-tasting and experiential learning.** Teachers should provide children with the opportunity to taste a variety of healthy, local snacks every week (preferably two to three times per week). Take students to visit local farms, farmers' markets, supermarkets, factories and other local food institutions where students can apply what they learn in the classroom. A key to the success of *The Kindergarten Initiative* is developing an education strategy that works with the community to enable children to apply the nutritional and local farming concepts they learn in school.
7. **Involve parents and the community by maintaining regular communication with all stakeholders.** Parents constitute an important focus of the intervention; they can influence the amount of fruits and veggies their children eat each day. Bring the community on board, including the media, local chefs, supermarkets and other local businesses. Use newsletters and surveys to establish a strong network of dedicated stakeholders in the community, at home, and in school. To maintain consistent personal contact with all educational stakeholders, use mailings for special events, monthly newsletters, letters of appreciation, and surveys of attitudes. This communication will help ensure that children continue to be educated about nutritional and local farming concepts even after they leave the classroom.

RESOURCES REQUIRED

Staff:

The estimate of staff needed to implement *The Kindergarten Initiative* is based on a first year program that includes **10** schools and approximately **30** kindergartens.

- A full-time program manager to oversee administrative aspects including planning, funding, budgeting, reporting, school district compliance, and, in the first year, to support the curriculum alignment plan (See *Intervention Materials* section for Curriculum Alignment Plan, instructions and template.) The program manager can also make the initial community contacts with schools, farmers and community partners.
- A part- or full-time associate to manage local snack and farm store ordering and distribution system (amount of staff time needed depends on existing infrastructure at the school and in the community for local food sourcing and distribution). This person would also help coordinate and run the farm store and would help procure local foods for cooking workshops and demonstrations.
- A full-time program coordinator/field educator to provide support to teachers, teach occasional model classroom lessons, answer questions, plan and facilitate parent events and document progress. This position would create newsletters and parent fliers, schedule events, and serve as the primary contact with teachers and community partners after the program manager has made initial contact.

For 10 schools with 3 kindergartens per school (30 kindergartens), estimate 2 full-time positions

Materials & Costs:

Costs are presented at the **classroom level for one year**. For example, the farm trip cost is estimated at \$744 for a classroom of 33 kids and 10 parents participating.

- **Nutrition and Agriculture Education**

The Food Trust recommends that kindergarten teachers spend approximately 8 hours per month on nutrition and agriculture education. Costs include \$100 per teacher to purchase teaching tools and materials for use in the classroom for books, other educational resources and materials for activities. (1 teacher x \$100) = **\$100**

- **Farm Trips**

The Food Trust recommends that students and their parents partake in at least two farm trips during the school year, in the fall and spring; a third in the winter can be added, if feasible. Students learn about the seasonality of the farm and participate in farm activities. (1 bus x \$200/bus) + (33 students and 10 parents [43] x \$4 fee/person = \$372/trip x 2 trips = **\$744 per classroom**. The school program negotiates the farm trip fee with the farmer.

- **Healthy Snacks**

It is recommended that students in the KI program taste a healthy snack (primarily fresh fruits and vegetables) not less than 2 times per week. The goal should be to source at least 80% of healthy snacks from local farms. In the Philadelphia area, the cost per snack is \$1 per child per snack; the cost includes purchasing and processing healthy snacks and delivering them.

(33 weeks x 2 snacks/week x 33 students x \$1/snack) = **\$2178**

- **Parent Activities, including Kindergarten Farm Stores**

For parent programming, including Back to School nights, Cooking in the Classroom, Healthy New Year activities and Kindergarten Farm Stores, The Food Trust recommends an allocation of \$350 per class (\$200 for parent activities and \$150 for Farm Store) to cover the cost of educational materials for parents, locally sourced food for events, and printing costs for parent handouts.

(\$350 x 1 class) = **\$350**

Estimated materials cost for 1 (one) class is **\$3372**.

Estimated materials and activities cost for **10** schools with **3** kindergarten classrooms per school is approximately **\$100,000**.

IMPLEMENTATION

How it works

The Kindergarten Initiative (KI) relies heavily on communication and collaboration among teachers, parents, farmers, and local businesses to promote experiential learning opportunities for kindergarten students in primarily low income areas.

Recruit schools

The first task in setting up a KI program is to choose schools that would benefit from the program. Whoever is in charge should consider giving preference to schools located in areas where a high percentage of children are eligible for free and reduced-price school meals. Program organizers should work to ensure the commitment and enthusiasm of administrators and teachers. If multiple schools are selected for the program, the proximity of schools to one another is an important factor to consider when planning for snack delivery.

Obtain funding

For start-up funding, look to private foundations, apply for grants, or contact local businesses that might want to “adopt” a school(s). Long-term sustainability of the program is an important consideration. In Pennsylvania, the initial years of the Kindergarten Initiative demonstrated a model program resulting in passage of legislation that authorized the state Department of Agriculture to establish a program to award KI grants to public school districts, charter schools and private schools. A program like the *Kindergarten Initiative* has a natural appeal to state departments of agriculture, education, and health.

Recruit farmers and community partners

Check with your state Department of Agriculture and/or state farmers market association to identify farmers for the program. Recruit local fruit and vegetable farmer(s) who already conduct farm tours (have the necessary insurance, etc.) and are willing to tailor their tours to the needs of the program (to what students are learning in the classroom). If necessary, recruit multiple farmers to provide the local produce for the snacks and farm stores. To shape your tentative snack menu, determine what farmers will have growing throughout the season. Having a network of farmers may come in handy when you need larger quantities of produce than one farmer can provide. Ideally, to enhance the connection between food and its source, the farm where students visit for their trips should supply some of the local produce for snacks or the farm store.

Plan logistics for delivery, processing, and storing snacks

Determine a system for getting produce from farms to the schools and for processing individual snacks from the produce. Snacks consist primarily of fresh fruits and vegetables that need to be cleaned, cut up and put on trays for each classroom. If the schools cannot clean and make the snacks, ask local chefs and caterers to take on this responsibility. If this is the case, determine whether the produce will be delivered to them or they will pick it up. Teachers are extremely busy and appreciate when they have little or no prep work for snacks. Once snacks are delivered, determine where they will be stored at the school, and get “buy-in” from cafeteria staff by keeping them in the communication loop. Talk to partners about the importance of the snacks’ presentation and its eye appeal for young children.

Adapt curriculum alignment plan and sequential, comprehensive, standards-based framework for teaching nutritional and local farming concepts to kindergarteners. The curriculum alignment plan integrates nutrition and agriculture education into regular core-curriculum lessons. Work with district administrators/school board/teachers to adapt the curriculum as needed.

Train kindergarten teachers

- Hold pre-program in-service, interactive training to generate excitement, explain the program and help teachers integrate nutrition, agriculture and physical activity concepts into existing subject-based curricula. In addition to reviewing program materials with teachers, include demonstrations of snack time and physical activities. This training,

which helps teachers understand the scope of the program, provides a good time to troubleshoot any issues that they have (e.g., time needed to implement the program).

- Provide teachers with educational materials to implement the program. The *Kindergarten Initiative* curriculum is shared in the *Intervention Materials* section of the template.
- Offer continuous support to educators and show them how valuable they are by encouraging regular feedback and monthly collaboration. Highlight individual teachers and encourage sharing of best practices. (The Food Trust set up an online “wikispace” where teachers could post photos, share ideas and get program information and updates.)

Educational components:

- Curriculum alignment plan and framework — Work with school administrators or the school board to adapt curriculum alignment as necessary. The curriculum alignment plan in *Intervention Materials* section is based on Pennsylvania standards.
- Kindergarten Farm Store — The farm store works like a book club and enables parents to purchase fresh, local produce. Ideally, produce for sale are items that students have tasted as snacks, thus reinforcing healthy choices in the home. Determine how often to hold a farm store event (Monthly? Seasonally?) and contact farmers to determine what produce will be available and the cost. Decide how many items you want to offer, create a parent flier, and have envelopes printed, if desired. Decide on a timeline for orders to be placed and select the pickup date. Have teachers send order forms and envelopes home to parents; teachers will collect orders and money. Order produce from farmers and determine delivery logistics. Consider delivering the produce to the schools and having the students sort out the orders (great way to incorporate math). Parents can pick up orders at school.
- Back to School Night — This can be a great opportunity to talk to parents about the program, encourage them to be healthy role models and ask them to provide plenty of fruits and vegetables at home to reinforce healthy choices.
- Cooking in the Classroom — Recruit local chefs to do cooking demonstrations in classrooms for the children and invite parents and caregivers. Students get excited to try foods that they have helped to prepare, and when parents see their children eating fruits and vegetables, they will be more likely to buy them for the home. The Pennsylvania KI program held cooking demos in the fall and spring, but they can be done as often as is feasible or desired. Consider providing teachers with cutting boards, kid-friendly knives and other cooking supplies with recipes to do “cooking” on their own, without outside staff support.
- Healthy New Year — This is a great time for teachers to discuss healthy New Year’s resolutions with their students and to include caregivers in pledging to eat healthy with their children. At assemblies, teachers can have students perform plays, skits, or sing songs about healthy foods, and be sure to invite parents. Some events have included healthy food parties.
- Physical Activity Education — In 2009, a physical activity component was added to the program, which includes supplemental lessons and activity ideas, and physical activity materials for classrooms. A set of 90 laminated Snack and Move cards was developed for teachers to use during snack time and to incorporate physical activity into the day. Please see Additional Information section.

Keys to Success

1. Ensure that teachers know how valued and respected they are by providing continual support and communicating with them regularly.

2. Bring the principal on board as an active and visible supporter both inside and outside the classroom.
3. For children to want to try healthy snack foods, the snacks will need to have visual appeal.
4. Regularly reinforce farm trip experiences in the classroom to make a lasting impression.
5. In the classroom, compare fall and spring produce as well as local and non-local produce to demonstrate seasonality and a variety of produce.
6. Encourage and praise children for trying new healthy foods. By making healthy choices, they can act as role models for other children.
7. Work with farmers who are interested in both selling produce to schools and participating in the educational activities.
8. Local produce can be frozen/canned in the fall and spring to be used during the winter months.
9. Involve parents by giving them sample snacks and inviting them to classroom events. Teachers can help keep parents informed through bulletin boards and other classroom aids.
10. Create visually appealing nutrition-related materials to send home to parents.
11. Help teachers and principals deliver consistent health-promoting messages to children by encouraging schools to complete a healthy environment assessment such as the School Health Index <http://www.cdc.gov/HealthyYouth/SHI/> Assessment results can point out conflicts between current school and classroom practices and what is being taught in the KI program. You can best reach teachers during their annual back to school training.
12. Since parents tend to participate more in events that are held at school during school hours, connect with them during times that coincide with existing school programs. For example, plan KI events during Back to School Night, parent conferences, or other times when parents are already at the school. Parents love to see their kids perform and to perform activities with their kids (like cooking in the classroom).

Barriers to Success

1. Attitudes and perceptions in the school community about what children will accept and about the importance of good nutrition can interfere with efforts to promote fruits and vegetables and nutrition education.
2. Parents may not have access to local, healthy foods, thus making change in the home environment difficult.
3. Teachers have very busy schedules and may not initially feel that they have the time to complete components of the program.
4. Depending on existing local food infrastructure, setting up the procurement and delivery system for local snacks will require an investment of time to develop a sustainable system.

EVIDENCE REVIEW SUMMARY

Underlying Logic: *The Kindergarten Initiative* is guided by a detailed logic model that specifies intended audience, program components, activities, and objectives.

Strategy Used¹: *The Kindergarten Initiative* applies the following evidence-based strategies for healthy eating:

- **Comprehensive nutrition program in a single setting:** KI is a multi-component intervention involving children, teachers, parents, farmers, and local businesses to promote experiential learning opportunities. For children, KI teaches nutritional and local farming concepts in the classroom, hosts farm field trips to connect children to growing and promotes taste-testing of new fruits and vegetables. For parents, KI uses newsletters and surveys, a Farm Store, and special events, like cooking demonstrations by local chefs, to reinforce healthy eating at home.
- **School nutrition programs to promote healthy eating:** The KI curriculum and alignment plan integrates nutrition and agriculture education into regular core-curriculum lessons, enabling classroom teachers to more easily integrate key nutritional concepts.
- **Increasing purchasing and use of foods from local farms:** is accomplished by recruiting local farmers to deliver produce to schools for snacks and to supply fruits and vegetables to fill orders for the kindergarten farm store.

Evaluation Outcomes: The *Kindergarten Initiative* was developed and evaluated in the field as a practice-based intervention. In a 2005-2006 evaluation of the program, six schools were randomized so that three schools received the intervention and three did not. The majority of kindergarten students (241 out of 360) at the six schools participated in data collection, and return rates of surveys were reasonable. The 2005-2006 data showed improvements in a) children's knowledge of a healthy diet (recommended number of daily servings of fruits and vegetables, portion sizes of foods to eat), b) children's awareness of where food is grown, and c) number of fruits consumed by children per day (according to parent report).

POTENTIAL PUBLIC HEALTH IMPACT

Over time, the *Kindergarten Initiative* has potential for broad reach, adoption, implementation, and maintenance.

Reach: Placing this intervention in a public school reaches all kindergartners in that school. Evidence on reach to parents is supported by data on parent participation in the 2005-2006 pilot study and on parents' awareness of the program and their reports of its effects on their awareness of locally grown food.

Effectiveness: In a 2005-2006 pilot study, the effects of the intervention were tested in 6 schools – 3 randomized to the intervention and 3 to the control. A total of 241 kindergartners participated in the study. Students in the intervention school had higher knowledge of a healthy diet and of where food is grown, and they consumed more servings of fruit per day according to parent report. Children in both intervention and control schools increased their ability to read food labels. Data on the number of healthy snacks served per week also suggest that the intervention had a positive impact on students' access to healthy foods; although, no data are available to compare the quality of snacks served before and after implementation of the intervention.

Adoption: Fifty-three schools in Pennsylvania adopted the program as a result of state funding from 2007-2009. This expansion was facilitated by the state's passage of legislation and

¹ A full description of the **intervention strategies** used can be found on the Center TRT website with references to the sources of evidence to support the strategies.

allocation of funding to support the program. The program has also been adopted in schools in Missouri, New Jersey, and Massachusetts.

Implementation: Teachers reported that the initiative was easy to implement, and education concepts were easily integrated into the regular curriculum. Implementation process data were collected on the number of teachers teaching nutrition, number of teachers trained, number of hours teachers spent teaching about nutrition and local food, number of healthy snacks served, whether snacks were from local farms, and parents' participation in components of the program. The limited information available on how implementation data were collected limits conclusions about the extent of implementation.

Maintenance: The *Kindergarten Initiative* has been sustained since 2004, during which time it has expanded from 4 schools in Philadelphia to approximately 80 elementary schools in Philadelphia, Norristown, Lansdowne, and Reading in 2012. This growth is a result of the Pennsylvania General Assembly passing the **Health Farms and Healthy Schools Act** in 2006, which provided grants through the PA Department of Agriculture to schools to start similar programs. The program is also being implemented in Missouri (7 schools). In Massachusetts, the KI has taken root in Worcester (5 schools) and Mount Holyoke (3 schools).

INTERVENTION MATERIALS

The *Kindergarten Initiative* materials can be downloaded from the [Center TRT website](#).

Note: The curriculum materials, including nutritional content and recipes, have not been reviewed by the Center TRT.

The *Kindergarten Initiative* Toolkit consists of a booklet, *The Kindergarten Initiative: A Healthy Start to a Healthy Life* and an accompanying resource CD. The contents of the CD are posted here, and additionally, can be requested from The Food Trust.

The Kindergarten Initiative: A Healthy Start to a Healthy Life

Integrating Nutrition and Agriculture Education into a Standard Curriculum

Curriculum Alignment Plan

- How To - Curriculum Alignment Plan
- How To - Nutrition and Agriculture Education
- KI Curriculum Alignment Plan
- Curriculum Alignment Plan Template

Framework

- How to Use the Framework
- Monthly Planning Guide
- Example from PA Science and Health Standards

Kindergarten Initiative Lesson Plans

- I'm a Healthy Consumer
- I'm Alive and Growing
- I'm Growing Healthy
- I'm Growing Healthy Food

Resources for Lesson Plans

Feeding Children Well

- How To - Healthy Snack Time
- How to –source local snacks
- Sourcing snacks year-round
- Why buy local
- Resources for Implementing Healthy Snack Time
- Song Book: Raise Your Voice for Good Food

Connecting Children to Growing

Farm Trips

- How To – Farm Trips
- Fall Farm Trip Itinerary and Lessons
- Winter Farm Trip Itinerary and Lessons
- Spring Farm Trip Itinerary and Lessons

Gardening

- How To - Gardening
- Resources

Partnering with Families to Create Change

- How to partner with Families
- KI Program Year at a Glance Sample and Template
- Recipes
 1. Cooking in the Classroom
 2. Farm Store
 3. Healthy New Year Healthy New You

Bringing the Community on Board

- How To - Bring the Community on Board
- Community Group Letter template
- Local Chefs letter template
- Sample Press Release and template
- Sample Resource Fliers

Evaluation

- KI Evaluation Resources
 - Student knowledge assessment
 - End of year Parent Survey
- Kindergarten Initiative Logic Model
- 2006-2007 Evaluation Report

Healthy Farms and Healthy Schools Program Act (SB 1209)

TRAINING AND TECHNICAL ASSISTANCE

As developer of *The Kindergarten Initiative*, The Food Trust will consult with new clients interested in implementing the program. Consultation can be arranged by the hour or by the

project. Hourly fees range from \$75 to \$150. To talk about the project, contact Karen Shore at kshore@thefoodtrust.org, 215-575-0444 x106.

ADDITIONAL INFORMATION

Web links: The Food Trust

<http://www.thefoodtrust.org/php/programs/kindergarten.initiative.php>

Program Contact:

Catharine Devigne

Manager of Early Childhood and Caregiver Programming

Phone: 215-575-0444 x122

Email: cdevigne@thefoodtrust.org

Related Resources:

Healthy Farms and Healthy Schools Bill (SB1209) passed in 2006

Snack and Move cards – Samples are provided here, and please contact Catharine Devigne for more information or to order cards.

Missouri's Food From the Farm materials – these materials were adapted from the Kindergarten Initiative's materials.

Preschool Initiative toolkit - <http://www.thefoodtrust.org/php/programs/preschool.php>