

**An Educational Vegetable Garden at  
Texas A&M Children's Center**

**Descriptive Case Study**

**Jayne Zajicek  
HORT 435 - Fall 2005**

## Introductory Story

While school gardens have seen cycles of popularity, they are not a new idea and have seen increased popularity in recent years. There are many reasons for this increase in popularity including benefits in the areas of academic, psychological, social, and environmental. The main reason the vegetable gardening program was introduced at the Texas A&M Children's Center was to improve nutritional attitudes and behaviors concerning vegetables of children attending the center, but is currently being used for several other programs.

However, the story about a three-year old named Billy demonstrates the many numerous benefits (and some drawbacks) that can be derived from experiences in school gardens. Billy loved going to the garden at the Children's Center each day and was extra excited today because the class was going to harvest the vegetables they had been growing all semester long. Billy plucked

three juicy red cherry tomatoes from the vine and held them tightly in his hand. He could smell the earthy plant scent of the tomato vines as he squatted next to the caged plants. He drew in the compost next to the plant with a stick while he sat next to his plants. He saw a roly poly bug and he counted at least two snails. Ms. Zager called for him, "B-i-l-l-y! Do you have your tomatoes for the group harvest basket? Billy!" Billy jumped. He looked at the ruby red fruits in his hand and felt his stomach twist from the anxiety of having to give up his prized tomatoes. It wasn't that he didn't want to share with the group. It was that he just didn't want to share **his** tomatoes with the group. Billy sprung to his feet and dodged Ms. Zager as he ran with his tomatoes past the peppers, past the squash and past the cucumbers. He pushed Joel and Jose' as he ran past them harvesting shiny perfect red gleaming pepper. Ms. Zager was confused now. "Billy Zielinski! Why are you running? Billy Zielinski! You come back here!" The other children were laughing as they gathered their produce.

Sally Garcia had an armful of green beans as Billy slid behind her plant and tumbled into her. She hollered, "Billy! Oooh! You've smooshed tomato all over me!"

Billy's class was one of the classes that participated in this vegetable garden program. During the spring, children gardened once a week and grew vegetables such as green beans, radishes, cherry tomatoes and red bell peppers. At the end of the gardening season, the children were to harvest the vegetables and place them in a community basket so that all children would have a chance to taste the vegetables that they helped grow. Billy, however, over the weeks that he participated in the gardening program developed such a strong feeling of ownership over "his" tomato plants that upon harvest he was not willing to contribute his harvest of the cherry tomatoes to the community basket. Do we look at this development as a positive benefit or a negative consequence of school gardening? In one way, Billy, a 3-year old, developed such a sense of pride and accomplishment, relating to an increase in self-esteem, that he wanted "his" tomatoes to take home to show and share his accomplishment with his parents. However, gardening experiences should also be presented in such a manner that children are taught the importance of team work and cooperation with others. By the time Billy was convinced to contribute "his" tomatoes to the community basket, they were already turned into tomato sauce and Billy was sent to his classroom and was not able to continue in the harvesting and tasting festival at the termination of the garden program. Unfortunately

this turned out to be a negative experience for Billy, but a learning experience for the instructors of the gardening program. The importance of team work and cooperation, along with sharing and good citizenship should be an important component of any garden program in addition to other goals that may want to be accomplished. In addition, parental involvement may be an important component to help children demonstrate their success and pride in their garden, but at the same time learn how important it is that everyone involved gets equal credit and opportunities to share in the success.

**Abstract:** School gardens are not a new concept and have seen an increase in popularity in recent years. They have been used in the school environment for multiple reasons reaping many benefits. It has been reported throughout history that school gardens have been used to teach horticulture, increase work ethics, improve life skills, and aid in academic, nutritional, and environmental education. Many of these skills and benefits seem to be seen most significantly in early childhood when attitudes and behaviors are being formed. The population of the case study program discussed in this paper is composed of children ages 3 through 4, so definitely this population fits the profile of early childhood development. The Texas A&M Children's Center is the program that is defined in this paper including its origination, mission statements, funding, and curriculum. The major area of the curriculum that is described below includes the use of a school garden program which is integrated into three areas including nutrition, environmental, and art and literacy education. The type of activities for each area will be described. In addition, benefits derived from evaluations of the activities and program areas, and interviews with the teachers will be discussed along with recommendations. The garden program and the Children's Center appears to be a key component to many of the outdoor activities that the children participate in, and a valuable educational tool that has been integrated into many aspects of the overall curriculum of the Center.

## OVERVIEW OF URBAN PROGRAM: TEXAS A&M CHILDREN’S CENTER

*“We serve as a model in the community for quality child care by maintaining standards for accreditation... We believe that the university, as an institute of higher education, is expected to provide an early childhood program of high quality to serve as a model throughout the community and state.” (Texas A&M Children’s Center, 2005a)*

### **History**



(Texas A&M Children’s Center, 2005b)

The Texas A&M University Children’s Center opened during the Fall of 1998, and is an affiliate of Teas A&M University, under the guidance of the Vice president for Administration. The Children’s Center is certified by the Texas Department of Protective and Regulatory Services, and follows the standards that are required of all childcare facilities. The Center is also accredited by the National Association for the Education of Young Children (NAEYC). The Center is located on Hensel Drive, north of the A&M main campus in College Station, Texas. The Children’s Center is a child care and preschool program and was created to provide support to A&M families, including undergraduate and graduate students, faculty and staff. Approximately 148 children attend the Children’s Center and ages of the children range from 6 weeks to 5 years. (Texas A&M Children’s Center, 2005c).

### **Mission Statement**

The Texas A&M University Children’s Center really has a three fold mission. The first part of their mission “is to promote access to higher education through affordable, accessible, quality developmental child care for university parents”. To achieve this mission they assist parents to achieve their educational and career goals and help strengthen the A&M recruitment, retention and graduation of students. The Center strives to provide programs that attract, retain, and service a diverse population of students particularly nontraditional, underrepresented, and at-risk students. This diverse population also includes low-income students and other students that face barriers to completing their education, such as the lack of child care. Another objective in helping to achieve the first part of this mission is to provide high quality child care which is affordable and accessible (Texas A&M Children’s Center, 2005a).

The second part of the Children's Center's mission is to "provide the highest quality developmental care for each child in a stimulating, secure and caring learning environment". The Center strives to provide educational programs that are culturally and developmentally appropriate for the children that they serve. In addition the staff at the center tries to provide for all areas of each child's development and education including cognitive, emotional, social, creative, and physical (Texas A&M Children's Center, 2005a).

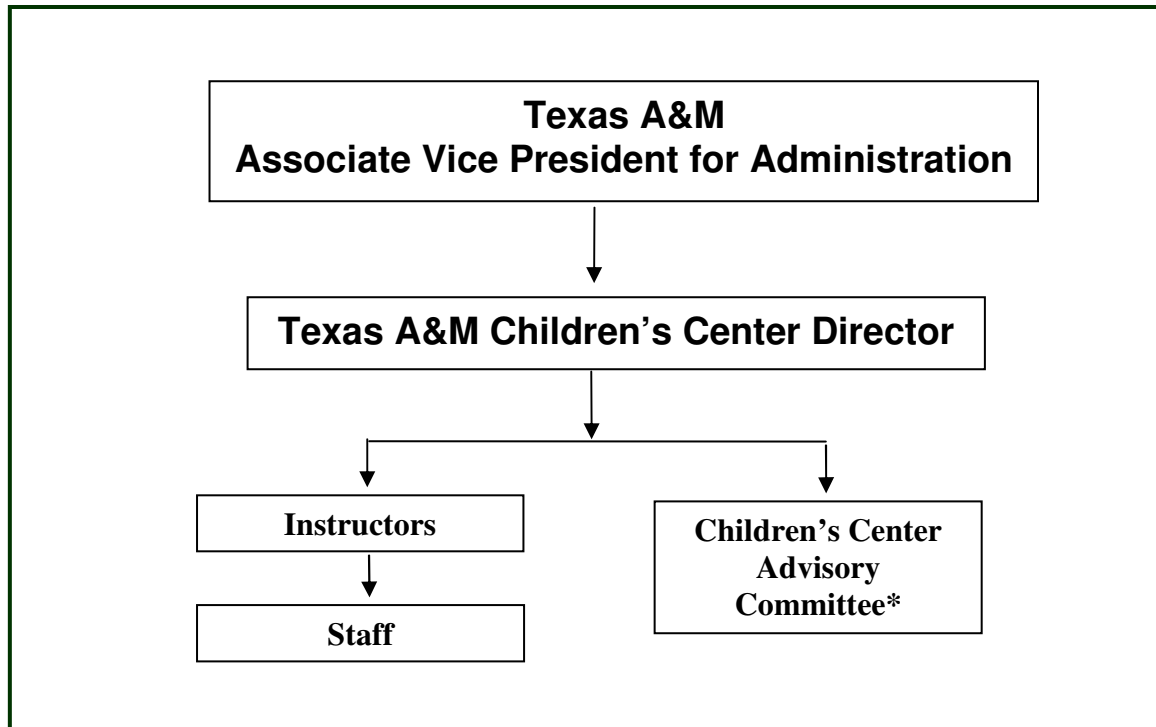
The third part of the Children's Center's mission is "to provide parent education and parent involvement opportunities", in addition to providing "meaningful employment and training opportunities for students who support themselves while achieving their education.". The first statement deals with helping parents of the children that the Center serves become and continue to be better parents through educational programs for the parents. The second statement involves undergraduate and graduate students enrolled at Texas A&M and offering them opportunities to get experience in their chosen careers at the same time being paid to help with educational expenses. This second statement is very important to graduate students who want to conduct research in various areas with the population age of the children enrolled at the Center. The Center allows for field research and observation opportunities for students, following the proper procedures through the Internal Review Board on-campus. to accommodate the instructional, research and service interests of academic divisions (Texas A&M Children's Center, 2005a).

### **Current Funding**

The Texas A&M Children's Center is self-supporting. The support for the Center comes from the tuition and fees paid by the parents and all of these funds are reinvested in providing quality programs for the children attending the Center and their parents. The tuition for students is calculated on a semester basis and covers the cost of the staffing and facilities that are needed in order to care properly for the children enrolled in the center. Texas A&M does offer limited amount of funds through a Tuition Supplement Assistance program. The distribution of these funds are determined by a committee, made up of members not associated with the Children's Center, from applications indicating family eligibility and need filled out by the parents of the children enrolled at the Center. Funds for the Tuition Supplement Assistance program are generated from different sources including: Texas A&M Student Services fee, state and federal grant money, and charitable donations (Texas A&M Children's Center, 2005c).

The Texas A&M Children's Center also has a Benefactors Program which allows and encourages parents to volunteer for different program activities at the Center. Parents volunteer to help teachers in the classrooms, build outdoor play equipment and structures, repair books and toys, sew sleeping mat covers and pillows, visit classrooms to share information related to their profession, hobby, or background, fund raising with local businesses and organizations, serving on the Parent Advisory Board, and many other types of opportunities (Texas A&M Children's Center, 2005d) .

## Organizational Structure



\*The Children's Center Advisory Committee is made up of parents, students, faculty, staff members, and a member of the Texas A&M Vice President for Administration's Office (Texas A&M Children's Center, 2005e).

## **EDUCATIONAL PROGRAMS AT THE TEXAS A&M CHILDREN'S CENTER**

*"We believe that young children learn best through play and exploration of a variety of materials and environments."* (Texas A&M Children's Center, 2005a)

### Anti-bias Curriculum

The Children's Center at Texas A&M tries to create a learning environment in which every child can develop a strong self-identity and a non-biased attitude with diverse populations. Each teacher is encouraged to help children explore their world in an open-minded and exploratory way. Teachers do this through a variety of methods including thought-provoking questions, guidance toward critical thinking, and new experiences (Texas A&M Children's Center, 2005a)

## Enrichment Activities – The School Gardening Program



As part of the regular curriculum, the Center offers a variety of enrichment activities for the children including cooking, growing plants, nature walks, and visitors who share information about a certain subject of interest. One of the enrichment activities included in the Center's curriculum is school gardening. While school gardens have seen cycles of popularity, current educational mandates and "hands-on" learning philosophies have helped school gardens increase in popularity in recent years. There are many document benefits of youth gardening and basically these benefits can be categorized into five main areas: academic (Klemmer, et al., 2005), social (Alexander, et al., 1995), environmental (Skelly and Zajicek, 1998), and nutrition education (Koch, et al., 2005).

## Nutrition Education Emphasis



One of the objectives of the gardening program and the Children's Center is designed to focus on nutrition education utilizing a vegetable garden with the objectives of encouraging students to accept a wider variety of vegetables in their diets and to improve their behaviors regarding vegetable consumption. This program is done in cooperation with the Texas A&M Horticulture Gardens which is adjacent to the Texas A&M Children's Center. The children's garden plots at the Horticulture Gardens include two, four-foot by eight-foot raised beds and eight, five-

gallon plastic terra cotta containers. Children participate in the vegetable gardening program one time each week for approximately 30 minutes each time. Children are involved in planting of vegetables by direct seeding and through transplants. Vegetables planted in the garden include green beans, radish seeds, cherry tomato seedlings and red bell pepper seedlings. In addition to planting, children also thin the seedlings, water the vegetable plants, learn about composting garden refuse, observe changes to the vegetable plants and fruit, look for insects, and harvest the vegetables.

Classroom sessions are also held once a week instructing students on nutrition- and horticulture-based subject matter designed to be approximately 30 minutes in length. The curriculum material is designed so that is developmentally-appropriate and activity-based to help instill in students an awareness of healthful behaviors and to provide positive expectancies from vegetable consumption. Lessons in this curriculum focus on encouraging dietary variety and improving children's attitudes towards vegetable consumption (Lorenz, 2002) (Appendix A).

At the end of each gardening season, children harvest the vegetables and put them into a community basket so that all of the children have an opportunity to taste the vegetables that are grown by each class.

### **Evaluation of Nutrition Emphasis**

A scientific research evaluation was done during the Spring Semester of 2002 (Lorenz, 2002). The biggest difference in vegetable preferences, as indicated on the sample questionnaire (Appendix A), noted by the students prior to and after gardening was the preference to eat radishes. Most of the students in the evaluation study already had positive attitudes towards eating vegetables and test tasting the vegetables prior to growing them in the garden, so gardening seemed to reinforce this preference for fresh vegetables. However, teachers of the classes that participate in the gardening program note many other benefits to the children that garden. They are much more willing to work together to accomplish goals and tasks set for them during that 30 minutes. The children are eager to care and take ownership and responsibility for the vegetable plants. In addition, they seem to retain information about the vegetables and the benefits of eating vegetables when they actually get to have hands-on experience in the garden, and they begin to realize where and how vegetables actually grow. Teachers also commented on how enthusiastic the children are about getting to go outside and participate in an outdoor activity, and show much more enthusiasm and energy while being in this environment.

### **Recommendations for Nutrition Emphasis**

Early experience with foods and eating is critical to the development of food patterns (Contento, et al., 1995). However, there are many outside influences that affect vegetable consumption of children, such as fast food commercials, parent preferences, availability, etc (Van Den Heuvel, K., 1982). Therefore, it is unlikely that vegetable gardening in a school setting by itself will be sufficient to alter consumption patterns of

children. One recommendation for improving this educational program would be to recruit and educate the parents of these students about the importance of increasing vegetable consumption, strategies for promoting vegetable intake, and skills to enhance consumption.

### **Future Funding Sources**

- ◆ The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) (NIDDK, 2005a)

- **Mission Statement**

The National Institute of Diabetes and Digestive and Kidney Diseases conducts and supports research on many of the most serious diseases affecting public health. The Institute supports much of the clinical research on the diseases of internal medicine and related subspecialty fields as well as many basic science disciplines.

The Institute's Division of Intramural Research encompasses the broad spectrum of metabolic diseases such as diabetes, inborn errors of metabolism, endocrine disorders, mineral metabolism, digestive diseases, nutrition, urology and renal disease, and hematology. Basic research studies include biochemistry, nutrition, pathology, histochemistry, chemistry, physical, chemical, and molecular biology, pharmacology, and toxicology.

NIDDK extramural research is organized into divisions of program areas:

- Division of Diabetes, Endocrinology, and Metabolic Diseases
- Division of Digestive Diseases and Nutrition
- Division of Kidney, Urologic, and Hematologic Diseases (NIDDK, 2005b)

- **Program**

- School-Based Interventions to Prevent Obesity  
PA-04-145  
Release Date: August 16, 2004 (NIDDK, 2005c)

### **Environmental Education Emphasis**

Another emphasis area that includes the garden, in addition to other nature features around the Children's Center and the Horticulture Gardens, is environmental education. This emphasis area incorporates interdisciplinary studies into the classrooms to try and improve environmental attitudes of children. Researchers have reported that environmental education is a key to protection and improvement of the environment (Ramsey, et al., 1992), and that horticulture is a perfect way to integrate interdisciplinary studies into the classroom (Eames-Sheavly, 1994). Activities are incorporated into the daily curriculum at the Children's Center to emphasize to the children the importance of

the environment and the importance of its existence and preservation for the future. Teachers try and incorporate at least one outdoor activity, including but not limited to the school garden, every day. An example of one of the activities the students do during the semester is the construction of a bean teepee (Skelly and Zajicek, 1997). With the help of staff and teachers, the students are allowed to measure out the poles for the teepee, set up the teepee and plant and watch the seeds grow and vine around the teepee (Appendix B).



This activity includes the disciplines of history, nutrition, and math, but also gets the students actively participating in an outdoor activity.

Another activity that is very popular with the students is from a Texas Cooperative Extension Program (TAEX, 1999a & b), is called “Suck-A-Bug. This activity helps students collect insects and identify them placing them in beneficial and non-beneficial categories (Appendix B).

### **Evaluation of Environmental Emphasis**

Skelly and Zajicek (1998) reported that there was a significant positive correlation between the number of outdoor related activities students participated in and their environmental attitudes. The children at the Texas A&M Children’s Center look forward to their time outdoors and have fun with the activities that they participate in. No formal evaluation has been performed on this emphasis area, but it appears from talking with students that they are very aware of recycling and the importance of composting which is surprising in such a young age group.

### **Recommendations for Environmental Emphasis**

It appears that many of the activities that are used for this emphasis area do not specifically address the environment or environmental issues. Increased environmental awareness comes with increased knowledge about the environment and new knowledge

can lead to a change in attitudes (Ramsey and Rickson, 1976). The activities should still remain fun, but it appears that more about the environment and environmental issues could be incorporated.

### **Future Funding Sources**

- ◆ The Tiger Woods Foundation (Tiger Woods Foundation, 2005a)

- **Mission Statement**

We empower young people to reach their highest potential by initiating and supporting community-based programs (Tiger Woods Foundation, 2005b)

- **Program**

- Education

Programs that enhance the learning process and transitional programs for young adults to become productive adults (Tiger Woods Foundation, 2005c)

### **Literacy Education Emphasis**



The final emphasis area at the Children’s Center is targeted at art and literacy in the garden. This program is in the initial stage this semester and goes hand-in-hand with the environmental emphasis area in that it is an interdisciplinary program built around the garden. The objectives and activities included in this program are similar to the program developed by Roxann Poskey “Magic and Mystery in the Garden” (Poskey, 2002) (Appendix C). Since the program is just beginning, there are no evaluation or recommendation sections for this emphasis area.

### **Future Funding Sources**

- ◆ The Meadows Foundation (Meadows Foundation, 2005a)

- **Mission Statement**

The Meadows Foundation exists to assist people and institutions of Texas improve the quality and circumstances of life for themselves and future generations (Meadows Foundation, 2005b).

- **Program**

- Open Funding (Meadows Foundation, 2005c).

## **SUMMARY**

Teachers and staff at the Texas A&M Children's Center have seen many benefits derived from incorporating gardening and outdoor activities into their existing curriculum. One of the programs utilizing the garden in nutrition education has been scientifically evaluated and results have indicated that by growing their own vegetables, children seem to be more willing to include these vegetables in their diets. The other programs that are utilizing the garden, such as the environmental and art and literacy education programs have not been formally evaluated, but the teachers and staff seem willing to participate in this type of formal evaluation. They also see the need for more parental involvement in the garden and the outside activities, so that knowledge and attitudes that are being formed at the Center are continued to be positively reinforced at home. In the long term, the more accurate knowledge, and the more positive attitudes, should translate into better behaviors in many areas of childhood development for the children participating in these hands-on learning activities, including the garden.

## **LITERATURE CITATIONS**

Alexander, J., M.W. North, and D. Hendren. 1995. Master gardener classroom garden project: An evaluation of the benefits to children. *Children's Environ.* 12(2):256-263.

Contento, I., G.I. Balch, Y.L. Bronner, L.A. Lytle, S., Maloney, C.M. Olson, and S.S. Swadener. 1995. The effectiveness of nutrition education and implications for nutrition education policy, programs, and research: a review of research. *J. Nutr. Educ.* 27:284-380.

Eames-Sheavly, M. 1994. Exploring horticulture in human culture: An interdisciplinary approach to youth education. *HortTechnology* 4(1):77-80.

Koch, S., S. Lineberger and J.M. Zajicek. 2005. Can an Educational Program on the Nutritional Benefits of Citrus Fruit Positively Influence the Nutritional Attitudes of Children? *HortTechnology*. 15(3):468-471.

- Lorenz, S.G. 2002. Improving vegetable preference and consumption among preschool children: evaluating results from an educational intervention using vegetable gardening. College Station, Tx. Texas A&M University. Thesis
- Meadows Foundation. 2005a. <http://www.mfi.org>. Retrieved on 09/14/2005.
- Meadows Foundation. 2005b. <http://www.mfi.org/Welcome/mission.asp>. Retrieved on 09/14/2005.
- Meadows Foundation. 2005c. <http://www.mfi.org/grants/FAQ.asp>. Retrieved on 09/14/2005.
- NIDDK. 2005a. <http://www.niddk.nih.gov/index.htm>. Retrieved on 09/14/2005.
- NIDDK. 2005b. <http://www.niddk.nih.gov/welcome/mission.htm>. Retrieved on 09/14/2005.
- NIDDK. 2005c. <http://www.niddk.nih.gov/fund/crfo/R03pas.htm>. Retrieved on 09/14/2005.
- Poskey, R. 2002. Barbara Bush literacy and arts in the garden: magic and mystery in the garden. HORT 435 project.
- Ramsey, C.E. and R.E. Rickson. 1976. Environmental knowledge and attitudes. *J. Environ. Educ.* 8:10-18.
- Ramsey, J.M., H.R. Hunberford, and T.L. Volk. 1992. Environmental Education in the K-12 curriculum: finding a niche. *J. Environ. Educ.* 23(2):35-45.
- Skelly, S.M. and J.M. Zajicek. 1997. Project Green activity guide. Book 2: Instructional Material Service, Texas A&M Univ., College Station.
- Skelly, S.M. and J.M. Zajicek. 1998. The effect of an interdisciplinary garden program on the environmental attitudes of elementary school students. *HortTechnology.* 8(4):579-583.
- Texas A&M Children's Center. 2005a. <http://childrens-center.tamu.edu/about/philosophy.html>. Retrieved on 09/14/2005.
- Texas A&M Children's Center. 2005b. <http://childrens-center.tamu.edu/>. Retrieved on 09/14/2005.
- Texas A&M Children's Center. 2005c. <http://childrens-center.tamu.edu/about/>. Retrieved on 09/14/2005.
- Texas A&M Children's Center. 2005d. <http://childrens-center.tamu.edu/benefactors/>. Retrieved on 09/14/2005.

Texas A&M Children's Center. 2005e. <http://childrens-center.tamu.edu/info/policies.html>  
Retrieved on 09/14/2005.

Texas Agricultural Extension Service (TAEX). 1999a. Junior Master Gardener handbook,  
Level 1. Texas A&M University Ag Communications Department, College  
Station.

Texas Agricultural Extension Service (TAEX). 1999b. Junior Master Gardener  
Teacher/Leader guide, Level 1. Texas A&M University Ag Communications  
Department, College Station.

Tiger Woods Foundation. 2005a. <http://www.tigerwoodsfoundation.org/>. Retrieved on  
09/14/2005.

Tiger Woods Foundation. 2005b.  
<http://www.tigerwoodsfoundation.org/home/default.sps>. Retrieved on  
09/14/2005.

Tiger Woods Foundation. 2005c. <http://www.twfound.org/grants/default.sps?itype=7609>.  
Retrieved on 09/14/2005.

Van Den Heuvel, K. 1982. Teaching strategies in preschool nutrition education.  
University Park, Pa. The Pennsylvania State University. Thesis.

**APPENDIX A**  
**NUTRITION EDUCATION LESSON PLANS**  
**EVALUATION FORM**

# 1 Why We Eat

---

Objective: To develop an understanding of why we eat food  
To introduce to the importance of eating many different foods

Materials: Story of "Baby Bite"<sup>1</sup>, full color pictures of different foods from magazines, construction paper, children's glue

Ask children why we need to eat food and what would happen to us if we did not eat every day. Encourage responses from all children. Tell children that food gives us everything we need to grow strong and to have the energy to play. Ask each child to name a food that is good for them to eat.

Ask children if we should eat the same foods every day. Read the "Baby Bite" story. Emphasize that while we may not like a food the first time we try it that by trying "small" bites we may start liking that food more.

Following the story, allow children to make collages of good foods from magazine pictures.

---

<sup>1</sup> From Ziegler LO, editor. Education For Self-Responsibility IV: Nutrition Education. Austin, TX: Texas Education Agency; 1992

# 2 & 3 Veggie ID

---

**Objective:** To identify a variety of vegetables and fruits

**Materials:** Pictorial flash cards of vegetables and fruits starting with each letter of the alphabet (as many as possible), bite-sized samples of fresh mango, kiwi, blueberries. or other seasonal fruits that may not be familiar to children

Divide this lesson into two class periods to avoid overwhelming children with naming and/or learning twenty some-odd vegetables and fruits. Sing the alphabet song with the students in the class. Going through each letter of the alphabet, name vegetables and fruits starting with as many letters of the alphabet as possible on flash cards. Have children repeat the name of each vegetable or fruit. Go through cards a second time and see if children can identify each vegetable and fruit. Ask the children if they have ever eaten the vegetable or fruit. If so, ask them how they like to eat it.

Set up a tray with fruit pieces, and offer children samples of each new fruit to taste.

**Optional:** Set up a tray of vegetables that may be eaten raw or lightly steamed and may be novel to children such as jicama, snow peas, and zucchini squash.

# 4 Plant Parts We Eat

---

Objective: To identify parts of plants that we eat for food

Materials: Various fruits and vegetables, coloring sheets, crayons, markers, assorted colors of construction paper, children's glue

Children will be shown vegetables and fruits that represent all of the parts of plants. Examples can include carrots for roots, celery for stems, lettuce for leaves, broccoli for flowers, and tomatoes for fruits. Ask children to name different parts of their bodies. Tell children that plants have different "body" parts too. Show and let children examine different vegetables and talk about the parts that we use as food. To emphasize vegetable variety, have children participate in an art activity of coloring pictures of different vegetables not shown in the demonstration that represent different plant parts.

# 5 Bean Basics

---

**Objective:** To generate and awareness that sun. soil. and water are basic needs for all plants to survive

**Materials:** Small paper cups, commercial seed starting mix, water, pinto bean seeds, plastic plates (for saucers), pencil (for making drainage holes and seed holes)

Children will describe what all plants require for survival and observe how these requirements affect seeds/seedlings. Ask children what all people need to live? Once children have had the opportunity to respond, ask them why each (i.e. food, water, air, shelter, clothing) is important for life. Then ask children what all plants need to survive. Discuss children's responses.

In small paper cups, make drainage holes in the bottoms with a pencil At a worktable, give each child a paper cup and allow them to fill the cup ~ full with seed starting mix. Show children how to use their index finger to make a hole in the center of the soil for the bean seed to be planted in. Show them that they only need to make the hole as deep as their index finger. Have students place a pinto bean seed in the hole and cover it by smoothing the soil over the hole.

Let half of the children water their bean seeds. Place half of the watered bean seeds (WW) and all of the unwatered (UW) bean seeds on a windowsill. Allow children with initially watered bean seeds to water their bean seeds (WS) as needed. Do not water the others (UW). Place the remaining watered bean seeds .in a dark cabinet or closet (WC). Have children check their seedlings on a weekly basis and discuss why the seedlings look different.

# 6 Seeds of Change

---

**Objectives:** To develop an awareness of the differences between seeds from a variety of vegetables  
To develop an awareness of how seeds change when soaked in water

**Materials:** Seeds (bell pepper, spinach, radish, and carrot seeds; an avocado pit), an example of each mature product (green bell pepper, bolted spinach top, radish with top, carrot with top, and an avocado), small glass bottles, plastic wrap, rubber bands, pea seeds, water

Children will observe the effect water has on seeds. Ask children what seeds need to start

Children will examine seeds that are different in size, shape, and color. Children will see where different vegetables make their seeds. Ask children where seeds come from and if all seeds look the same. To show children that seeds come in many different sizes and shapes, pass examples of carrot and radish seeds, which are very small, and an avocado pit, which is large. To illustrate where seeds come from, show children a bell pepper and ask where the seeds are. After children have given responses, cut the pepper in half and show them the interior seeds. To show children that seeds are made on different parts of vegetables, show them a bowl of spinach and ask them where the seeds are. Next, show children a bolted spinach plant to illustrate how vegetables make seeds in various ways.

growing. Pack jars with pea seeds and fill each jar with water. Cover jars with plastic wrap and secure with rubber bands. Ask children what they think will happen to the seeds. Have children observe changes in the pea seeds after 24 hours of soaking and ask children to describe changes in the seeds.

# 7 Good Food

---

Objective: To develop positive attitudes about new foods

Materials: Laminated full-color poster of the USDA children's food guide pyramid, pictures of foods from magazines from all food groups, the book "Bread and Jam for Frances"<sup>2</sup>

Discuss with children that we should eat foods from each of the different groups of the pyramid every day. After naming each of the food groups, name some examples of foods from each group. Ask children if they can name additional foods from each group. Show children pictures of foods and ask if they know which food group they are in. To emphasize the importance of eating many different foods, read the book "Bread and Jam for Frances."

---

<sup>2</sup>Hoban R *Bread and Jam/or Frances*. Eau Claire, WI: E. Hale & Co.; 1969.

# 8 Pizza Plant

---

**Objective:** To associate plants with the foods they become through drawing a pizza plant and/or singing a song

**Materials:** Non-toxic markers, assorted colored construction paper, children's scissors, children's glue, a colorful poster of pizza with crust, cheese, tomato sauce, onions, mushrooms, etc., song sheet for leader (optional)

Ask the children how many of them eat pizza. Ask children if they know that all of the parts of a pizza come from plants. As an art activity, encourage children to draw what they think a "pizza plant" would look like. Let children describe their pizza plants to the class once completed.

Using a model of a vegetable pizza or a laminated poster of a pizza with removable ingredients, help the children describe how each ingredient comes from a plant. For example, cheese is made from milk, milk comes from cows, and cows eat grass, which is a plant.

Optional activity: Rap "The Choo Choo Song<sup>3</sup>," which describes food transformations (i.e. tomatoes become tomato sauce, lemons become lemonade). Sing the "rap" through several times to allow children to learn the chant and join in.

---

<sup>3</sup> From Whittlesey LA, Curtis MM, Laine GW, editors. *Plant Pals: 4-H Horticulture Guide for Clover Kids*. College Station, TX: Texas Cooperative Extension; 1990.

## RESOURCES

1. Jaffe R, Appel G. *The Growing Classroom: Garden-Based Science*. New York: Addison- Wesley; 1990.
2. Johns MJ, Tourtillott L, Krieshok L, Perrott N. *TWIGS Youth Development Program*. Half Moon Bay, CA: University of California Cooperative Extension; 1997.
3. Whittlesey LA, Curtis MM, Laine GW, editors. *Plant Pals: 4-H Horticulture Guide for Clover Kids*. College Station, TX: Texas Cooperative Extension; 1990.
4. Whittlesey LA, Seagraves RL, Welsh DF, Hall GW, editors. *Junior Master Gardener Teacher/Leader Guide*. College Station, TX: Texas Cooperative Extension; 1999.
5. Ziegler LO, editor. *Education For Self-Responsibility IV: Nutrition Education*. Austin, TX: Texas Education Agency; 1992.

## Vegetable Frequency Questionnaire - Pre-study

My Child's Age is \_\_\_\_\_ (in years and months)

Circle the answer that best describes your child.

1. My child is a
  - a. boy
  - b. girl
  
2. My child is
  - a. Asian
  - b. Black
  - c. Hispanic
  - d. Native American
  - e. White
  - f. Other
  
3. Has your child ever worked in a vegetable garden?
  - a. yes
  - b. no
  
4. If the answer to question number 3 is yes, where did he/she garden?
  - a. home
  - b. a relative's home
  - c. a neighbor's home
  - d. child care
  - e. my child has not ever worked in a vegetable garden

Circle the answer that best describes you and/or your spouse (if applicable),

5. I have completed
  - a. less than 12 years of public school
  - b. high school or its equivalent
  - c. some college or technical school
  - d. a bachelor's or advanced degree
  - e. more than a bachelor's degree
  
6. My spouse has completed (if applicable)
  - a. less than 12 years of public school
  - b. high school or equivalent
  - c. some college or technical school
  - d. a bachelor's or advanced degree
  - e. more than a bachelor's degree

7. Our household income is
- less than \$20,000 per year
  - \$20,000 - \$30,000 per year
  - \$30,000 - \$40,000 per year
  - \$40,000 - \$50,000 per year
  - more than \$50,000 per year
8. For the following vegetables, please circle whether you have ever offered your child the vegetable to eat at any meal or snack and if you serve this vegetable in your home. Then please tell how many times per day, week, or month that they usually eat that vegetable. **FOR EXAMPLE, if your child usually eats cabbage two times a month at home, your response would look like this:**

Vegetable	Has this vegetable ever been offered to your child?	Do you serve this in your home?	How many times does your child eat this vegetable per day/week/month?
Cabbage (cooked, raw or in a cole slaw)	<input checked="" type="radio"/> Yes/ <input type="radio"/> No	<input checked="" type="radio"/> Yes/ <input type="radio"/> No	<u>2</u> times per day/week/ <input checked="" type="radio"/> month

Vegetable	Has this vegetable ever been offered to your child?	Do you serve this in your home?	How many times does your child eat this vegetable per day/week/month?
Carrots	Yes/ <input type="radio"/> No	Yes/ <input type="radio"/> No	_____ times per day/week/month
Spinach	Yes/ <input type="radio"/> No	Yes/ <input type="radio"/> No	_____ times per day/week/month
Fried potatoes (French fries, tater tots, or hash browns)	Yes/ <input type="radio"/> No	Yes/ <input type="radio"/> No	_____ times per day/week/month
Tomatoes (fresh or in foods like spaghetti sauce, pizza, or salsa)	Yes/ <input type="radio"/> No	Yes/ <input type="radio"/> No	_____ times per day/week/month
Green, string, or snap beans	Yes/ <input type="radio"/> No	Yes/ <input type="radio"/> No	_____ times per day/week/month

Vegetable	Has this vegetable ever been offered to your child?	Do you serve this in your home?	How many times does your child eat this vegetable per day/week/month?
Cauliflower	Yes/No	Yes/No	_____ times per day/week/month
Beets	Yes/No	Yes/No	_____ times per day/week/month
Bell peppers (any color)	Yes/No	Yes/No	_____ times per day/week/month
Broccoli	Yes/No	Yes/No	_____ times per day/week/month
Peas (green, snap, snow, or English peas)	Yes/No	Yes/No	_____ times per day/week/month
Lettuce or Lettuce salads	Yes/No	Yes/No	_____ times per day/week/month
Potatoes that are NOT fried	Yes/No	Yes/No	_____ times per day/week/month
Radishes	Yes/No	Yes/No	_____ times per day/week/month
Cabbage (cooked, raw or in cole slaw)	Yes/No	Yes/No	_____ times per day/week/month

Vegetable Frequency Questionnaire – Post-study

For the following vegetables, please tell how many times per day, week, or month that your child usually eats that vegetable. Then indicate whether you have seen any change in your child’s consumption of these vegetables in the past two months. **FOR EXAMPLE, if your child usually eats green beans one time a week and this is more often than two months ago, your response would look like this:**

Vegetable	How many times does your child eat this vegetable per day/week/month?	Have you seen any change in your child’s consumption of this vegetable in the past two months?
Green, string, or snap beans	<u>  2  </u> times per day/week/month	Eats more/ eats less/ no change

Vegetable	How many times does your child eat this vegetable per day/week/month?	Have you seen any change in your child’s consumption of this vegetable in the past two months?
Carrots	_____ times per day/week/month	Eats more/ eats less/ no change
Spinach	_____ times per day/week/month	Eats more/ eats less/ no change
Fried potatoes (French fries, tater tots, or hash browns)	_____ times per day/week/month	Eats more/ eats less/ no change
Tomatoes (fresh or in foods like spaghetti sauce, pizza, or salsa)	_____ times per day/week/month	Eats more/ eats less/ no change
Green, string, or snap beans	_____ times per day/week/month	Eats more/ eats less/ no change

Vegetable	How many times does your child eat this vegetable per day/week/month?	Have you seen any change in your child's consumption of this vegetable in the past two months?
Cauliflower	_____ times per day/week/month	Eats more/ eats less/ no change
Beets	_____ times per day/week/month	Eats more/ eats less/ no change
Bell peppers (any color)	_____ times per day/week/month	Eats more/ eats less/ no change
Corn	_____ times per day/week/month	Eats more/ eats less/ no change
Broccoli	_____ times per day/week/month	Eats more/ eats less/ no change
Peas (green, snap snow, or English peas)	_____ times per day/week/month	Eats more/ eats less/ no change
Lettuce or lettuce salads	_____ times per day/week/month	Eats more/ eats less/ no change
Potatoes that are NOT fried	_____ times per day/week/month	Eats more/ eats less/ no change
Radishes	_____ times per day/week/month	Eats more/ eats less/ no change
Cabbage (cooked, raw or in cole slaw)	_____ times per day/week/month	Eats more/ eats less/ no change

**APPENDIX B**  
**ENVIORNMENTAL EDUCATION LESSON PLANS**

# Unit 6

## The Bean Teepee



Skelly, S.M. and J.M. Zajicek. 1997. Project Green activity guide. Book 2: Instructional Material Service, Texas A&M Univ., College Station.

## Unit 6

### The Bean Teepee

This unit includes activities to use in conjunction with a garden project creating a bean teepee. This unit allows teachers to relate this garden project to subjects beyond the garden. A Native American theme runs throughout this unit since teepees were constructed and used by Native Americans. In addition to providing an alternate learning source, the bean teepee is an ideal place for children to sit and enjoy a quiet space. Allowing children to sit in the teepee will give them an idea of what the teepees were like for Native Americans. Construction of the bean teepee is an activity which can span many disciplines. Although history is automatically inherent to this activity, geography and anthropology can be studied to learn which Native Americans used teepees and where they lived. Math skills can be enhanced by measuring the dimensions for the teepee. Language skills can be incorporated by using vocabulary words to help describe the differences and similarities between their bean teepee and the Native American teepee.

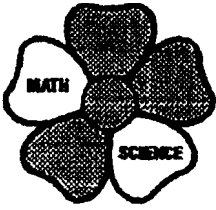
#### **OBJECTIVES:**

1. Measure and construct a bean teepee.
2. Explain how the Native Americans used teepees for lodging.
3. Identify which Native Americans used teepees and where they lived.
4. Describe differences and similarities between the bean teepee and the Native American teepee.

---

Skelly, S.M. and J.M. Zajicek. 1997. Project Green activity guide. Book 2: Instructional Material Service, Texas A&M Univ., College Station.

## UNIT 6: THE BEAN TEEPEE



### Activity 6-1 Constructing a Bean Teepee

#### OBJECTIVES:

Children will be able to:

1. Construct a bean teepee.
2. Measure dimensions for the teepee.
3. Prepare planting area and install plant materials.

#### INTRODUCTION:

This activity is intended to take place in the garden. Students will construct the frame of a teepee and in turn, students will enhance their measuring skills. Students will plant their bean seeds around the base of the frame and watch as the beans grow up and around the frame to create a teepee similar to those of Native Americans.

#### ACTIVITY:

Total time required: Should be taught at the start of the growing season.

Class time required: (1-2) 60 minute periods

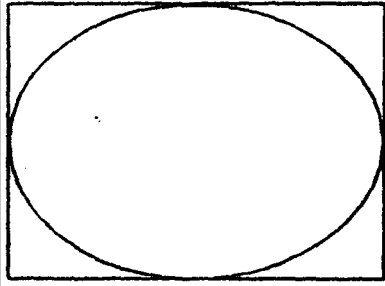
Materials required:

- Tape measure
- 3 or 4, 4'-5' poles, sticks, wood, or bamboo
- Sturdy string or twine
- Shovel
- Bean pole seeds

1. Draw a circle, this will serve as the base boundary for the teepee. The circle needs to be at least 3'-4' in diameter.
2. Lay the poles on the ground, Bring them together at one end.
3. Tie this end of the poles securely with the string or twine.
4. Secure the poles in the ground, place poles at least 1' - 2' deep at equal distances from each other around the circle.

5. Weave the string or twine around the poles going from the top to the bottom.
6. Place bean seeds around the base of the teepee frame. These should be planted 2 to 3 inches apart and about 1 1/2 inch deep.
7. Keep soil moist and watch as plants grow and twine around the frame.

Step 1.



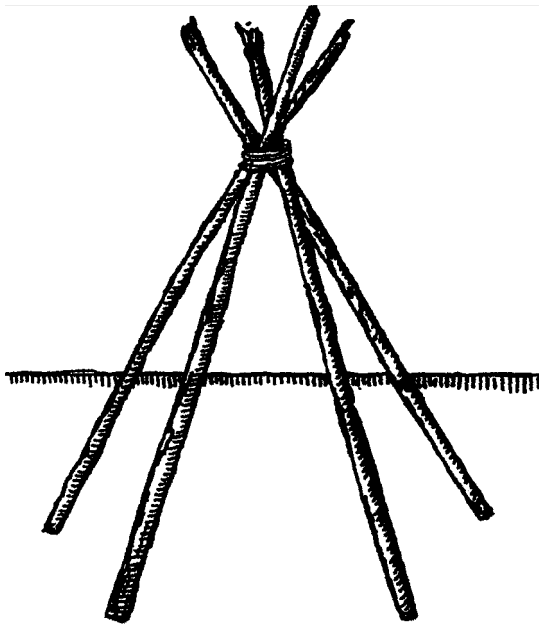
Draw a boundary circle on the ground 3 feet by 4 feet in diameter.

Step 2. and 3.



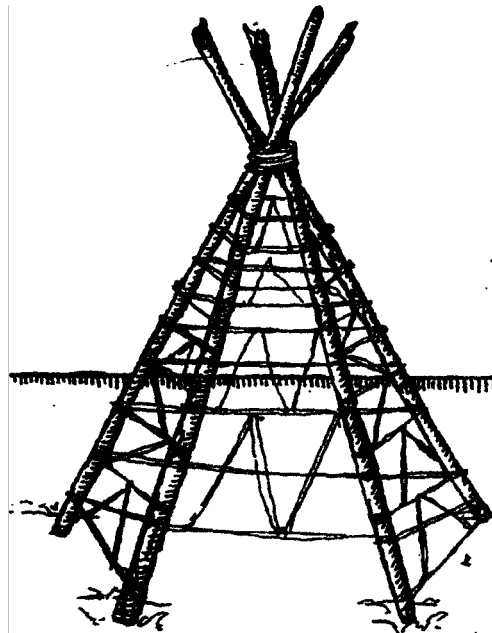
Lay poles on the ground, and tie end of poles securely with string or twine.

Step 4.



Secure poles in the ground 1 - 2 feet deep.

Step 5.



Weave the string or twine around the poles going from top to bottom.

# Insect Collecting

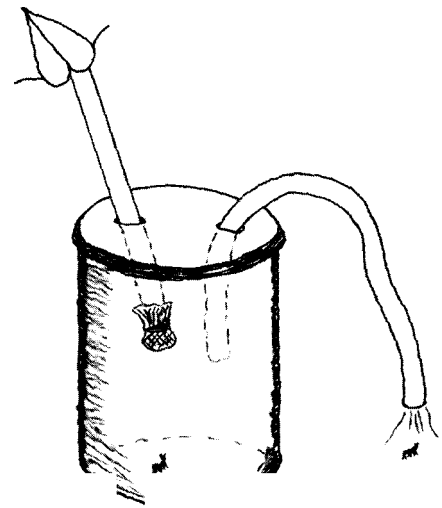
You may have at some time caught an insect, or watched one closely to see what it did next. Where you were at the time (the environment) and what you used to catch it (the method) influenced the type of insect you observed and/or caught. There are many places to look for insects, and a variety of specialized techniques have been developed for collecting them. Most methods take advantage of insect instincts in one way or another. In this section, you can teach your group a variety of enjoyable ways to collect insects to study. Your JMG'ers can set a trap for insects, make an insect night-light, sweep up insects, or create their own insect farm.

## Suck-A-Bug!

- Objectives: To make a simple aspirator and use it to collect and observe small insects. 30  
Time: minutes to make the aspirator, plus 30 minutes to 1 hour to collect and observe  
Materials: insects.  
Small plastic containers-clear if possible (film canisters are the perfect size, although usually opaque; you also can use small plastic herb bottles, small butter dishes or plastic test tubes), plastic drinking straws or flexible plastic tubing (tubing works better, but is a little more expensive), modeling clay, netting or gauze, tape, awl, ice pick or drill (for adult use).

There are many insects to see, and many ways to catch them so you can observe them. Nets work well for large insects, but tiny ones often go unnoticed. One way to catch these small ones is with a Bug Sucker, also called a pooter or an aspirator. Bug suckers are easy to make, but you will probably need to practice making and using one ahead of time before doing it with your gardeners.

Clean a small (preferably clear) plastic container and remove the label if it has one. Clear containers are handier because they allow the gardeners to observe the insect inside without opening the container. However, film canisters are the perfect size. (You can create a "window" in one by cutting out a section and replacing it with clear plastic, such as a piece from an overhead transparency. If you do this, make sure to seal the edges of the window with glue to keep air from entering. You will need good suction to be able to suck up a bug.)



Tape a piece of netting or gauze over one end of the drinking straw or tubing.

Use the awl or ice pick to make two holes in the top of the container. (If possible, use a drill to make holes in the lids ahead of time.) Insert the straw or tubing through one of the holes so that the gauze end is down in the container and the uncovered end is sticking out of the top. Insert the other straw or tubing through the other hole. Finally, seal both holes with a bit of modeling clay, but be careful not to pinch off the tubing.

When you suck on the straw with the gauze on the end of it, you create a vacuum. Use this suction to capture small insects. Gently place the end of the straw without the gauze next to a small ant or other creature, and suck on the other straw. The suction will pull the insect into the container, where you can safely hold and observe it. It takes a little practice to be able to keep the straw next to the insect while sucking on the other end. This is why the flexible tubing is better: It can be longer and is more flexible. However, straws are inexpensive and easy to obtain. Children love practicing their bug-sucking technique, and usually spend quite a while working on it.

## It's a Small World

- Objectives:** To make a Berlese (burr-lay-z) funnel and use it to collect and observe insects living in the ground and soil.
- Time:** 30 minutes plus additional time later that day and the next for observing.
- Materials:** 2-liter soda bottle (1 per child or group), coarse screening or hardware cloth (different materials may be used, but they should have holes at least  $\frac{1}{4}$  inch wide to allow insects to crawl through it), light with extension cord, place to hang light, bowl, soapy water.

Many insects live in the soil or the leaf litter just above the soil. Although we usually do not see many of these insects because they hide below ground, they can easily be collected using a Berlese funnel.

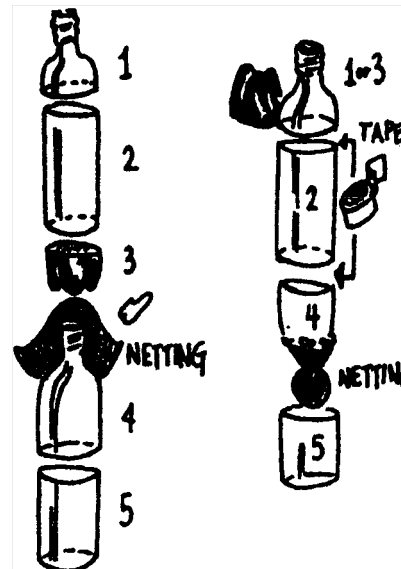
Show the gardeners how to make a funnel out of a 2-liter soda bottle by cutting the bottle in half. Turn the top part over to make a funnel. If you cut the bottom from the remaining portion of the bottle, you can use the resulting cylinder as a holder for the funnel to keep it from falling over. Have the gardeners place a piece of coarse screening or hardware cloth around the outside of the

•

funnel. Hold the screening in place by inserting the funnel into the bottom portion of the bottle. The screening allows insects to crawl through, but retains the soil. Place some leaf litter or soil inside the funnel. Then have the gardeners place the entire funnel/holder apparatus in a bowl containing a few inches of soapy water. Do not let the bottom of the net touch the water.

Suspend a light source a few inches above the funnel. The heat and light will drive the insects deeper into the soil, and they will fall into the soapy water below.

See which insects collect in the water immediately, after 2 hours, after 4 hours, and the next day. Have the gardeners make a chart showing the number of insects, and the number of different types of insects. You can also ask them to write a journal entry telling why they think the bugs traveled downward. (The insects are ground-dwellers; most live on or under the soil's surface where it is cool and damp. They instinctively travel away from light and heat. A Berlese funnel takes advantage of these instincts to collect these insects.) You will be amazed at how many insects can be collected in a small patch of soil. Yes, it is a small world—especially if you are a tiny little soil mite who may never travel more than a yard away from home!



**APPENDIX C**

**ART AND LITERACY EDUCATION LESSON PLANS**

**BARBARA BUSH LITERACY AND ARTS IN THE GARDEN**

**MAGIC AND MYSTERY IN THE GARDEN**

Project Coordinator  
Roxann Poskey

## **Barbara Bush Art and Literacy in the Gardens**

A one-day retreat will be held for third and fourth graders in the Barbara Bush Gardens integrating literacy and art within a garden venue; however this could be adapted for your local park or garden. The theme of the retreat is *Magic and Mystery in the Garden*.

The gardens recently finished construction on a new amphitheater and we have expanded our garden maze with an incredible tree house. We invite you and your children to explore our gardens and greet some of the magical and mysterious characters from children's literature.

Each class is greeted by the resonance of Classical childrens' music which is provided by the Texas A & M string quartet. Each class will be met by a Garden Docent with two trained volunteer facilitators, costumed as some of the enchanted and mystifying characters from children's literature. These characters guide you in your exploration of the gardens and assist in the instruction of the innovative activities designed from grade specific TEK objectives to encourage opportunities for the development of knowledge and skills in literature and art in a garden atmosphere.

The audience for this event will be third and fourth graders from the Bryan College station area. Expected age ranges are from 8-11 with a diversity of cultural experiences.

# Activities

## Scavenger Hunt

**Objective:** to engage the children's mind and imagination through the introduction of various magical and mysterious children's literature characters that will be revealed to them throughout the day, for them to become comfortable with their Docent and volunteers as they guide them in their sleuthing to discover the diversity of the gardens.

**Materials:** concealed clues, large vase

**Instructions:** The scavenger hunt will provide an opportunity for each child to become a sleuth like Encyclopedia Brown or Trixie Blenden. The detection of clues from books, fables and poetry will direct the children from one clue to another. Each class will start in an assigned garden location and Docents and facilitators need to remember to replace clues as they are discovered. Children should take turns reading each clue and discussing the answers with Docent assistance as necessary. When the class has solved the hunt, the Docent will surprise them with a final clue that leads the children to the Arnosky Endowed Cutting Flower Garden. Each child will select two flowers, one to be placed in a vase to be given to their teacher and another to take home. They will also select a packet of cut flower seeds for their personal garden.

### Sample clue examples:

Q) What house did the Sorting Hat almost put Harry in, in *Harry Potter and the Sorcerer's Stone*?

A) Slytherin

Q) What is the name of the "Good Witch" in *The Wizard of Oz*?

A) Pricked her finger on a spinning spindle

Q) Where is Aslan from?

A) Narnia

Q) What is unusual about Hobbit feet?

A) There are very hairy

## Nature Walk



**Objective:** To explore the garden grounds on their own and introduce children to the patterns and diversity found in their search of fascinating snippets of nature (bark, berries, butterfly wings, creature skeletons, feathers, flowers, leaves, pinecones, seed pods, twigs, unusual pebbles).

**Materials:** small zip-lock bags labeled with the name of child and school to place their treasures in.

**Instructions:** Two additional facilitators dressed as characters from *Narnia* will join the Docent and her assistants. Each class will be split into smaller groups of 3-5 children directed by a facilitator or Docent. The volunteers will aid each child in collecting their first scrap of nature; then allow their group to wander and investigate as they stumble on bits and pieces they think are interesting and/or would make cool impressions in clay for their pottery projects.

## Pottery Projects

**Objective:** to engage the children's intellect and develop their imagination by allowing them to apply nature's treasure in creating art.

**Materials:** Vases, clay, discovered nature treasures ((bark, berries, butterfly wings, creature skeletons, feathers, flowers, leaves, pinecones, seed pods, twigs, unusual pebbles), dull knives, wax paper, pebbles mix, quick-crete mix, quick-crete color, water, storage bins, markers and work tables.

**Instructions:** This outdoor classroom has five local potters/artist that will direct the Docent and her four facilitators allowing for approximately 2-3 children per volunteer. Dr. Jayne Zajicek of the Department of Horticulture has donated a hand-thrown vase for each teacher. The students will take one of their treasures from their Nature walk and press them into a rolled sheet of clay (12 x 12 x 1/4 ) and then cut along the outline (leaves, butterfly and dragonfly wings work well for this). It is a bit like concocting Christmas cookies. When they have completed one a potter/artist will assist them in adhering them to the hand-thrown vases. While the treasured additions to the vase are drying; the students will also construct individual small bird baths for their home gardens and a group large bird bath for their school garden. The children will remain in their dyad grouping and the volunteers will guide them to the formation site. Small hollowed holes have already been burrowed out in a pebble mix base. The facilitators will mix quick-crete and the children will add their personnel color selection. The facilitators will assist the children in pouring and shaping their bird baths. As they "set up", the facilitators will illustrate the placing of discovered treasures into the quick-crete mix. This will be replicated for class bird bath except the each child will place only one treasure in bird bath. The creations will be labeled, and crated for delivery to school.

## Maze

**Objective:** is to instruct the children on how to incorporate fun into physical activities and promote life-long learning habits in a garden setting. The keystone of this activity is for the children to relax, have fun and begin to appreciate the art of the maze sculpture, as well as the various bronze statues throughout the maze.

**Instructions:** Four different classes with their Docent and facilitators will enter on one of the four corners of the maze. Each corner of the maze is an entrance constructed to resemble Munchkinland. As the children enter it appears as though they have found the yellow brick road. Each class, with a little guidance from the Docent/facilitator, will determine which of the yellow brick roads to take. Each time the children encounter a bronze sculpture, the Docent will stop the class and chat about who the character is and from what book they come. Once they reach the middle of the maze the children and facilitators will slip through a "*rabbit hole*" and weave through the underground tunnels and then reemerge at the base of a large old oak which has been transformed into a magnificent tree house. Once the class is reassembled, Bryan High School's Theater department will recite its award winning recitation of the gifted author Shel Silverstein's *The Giving Tree*.

## Reflecting Pond

**Objective:** to inspire the children's' imaginations by drawing on the three different water gardens within the Reflecting garden as self-selected locations to engage in creative writing (either short story, or poetry), crossword puzzles, or rubbings.

**Materials:** Chunky crayons, nature treasures, pencils, puzzles, and writing paper.

**Instructions:** The Docent and their facilitators are divided between the three ponds allowing a 3-5 child ratio per facilitator.

## Creative Writing

**Objective:** to demonstrate to the children about poetry and rhyme and how to illustrate with words. The children will reflect on *The Giving Tree* and write a poem about something from their nature bag; or they will write a poem in the shape of a flower or leaf or items from their nature bag; or to develop a Harry Potter Haiku: (Haiku is an unrhymed Japanese poem recording the essence of a moment keenly perceived, in which nature is linked to human nature. These poems are usually written in three unrhymed lines of five, seven, and five syllables).

### Haiku Examples:

Hermione is one cute, crazy,  
Clever, quick, cunning, gifted, resourceful, intelligent wizardess.  
A brain filled female magic

Harry Potter zooming, flying, writing  
Hiding, zipping, fighting, flipping, flopping,  
spying Snooping around you are Harry Potter

# Appendix

Barbara Bush Photo: <http://www.whitehouse.gov/jhistory/firstladies/bb41.html>, October 15, 2003.

Caldecott winners:

[http://www.ala.org/Content/NavigationMenu/ALSC/Awards\\_and\\_Scholarships/1/Literacy\\_and\\_Related\\_Awards/Caldecott\\_Medal/Caldecott\\_Medal\\_and\\_Honor\\_Books,\\_1938-Present/Caldecott\\_Medal\\_and\\_Honor\\_Books,\\_1938-Present.htm](http://www.ala.org/Content/NavigationMenu/ALSC/Awards_and_Scholarships/1/Literacy_and_Related_Awards/Caldecott_Medal/Caldecott_Medal_and_Honor_Books,_1938-Present/Caldecott_Medal_and_Honor_Books,_1938-Present.htm), September 25, 2003

Children and Garden Photos:

<http://www.allposters.com/gallery.asp?aid=426124&c=c&search=623>, September 25, 2003

Dragonfly Photo: <http://www.dragonflies.org/>, October 15, 2003

Leaf Photo: <http://www.leafdigital.com/leaves.html>, October 19, 2003

Harry Potter Photos:

<http://www.factmonster.com/spot/harrycoverusa.html>. September 30, 2003

Narnia Photos: <http://www.narnia.com/>, October 1, 2003

Newberry winners:

[http://www.ala.org/Content/NavigationMenu/ALSC/Awards\\_and\\_Scholarships/1/Literacy\\_and\\_Related\\_Awards/Caldecott\\_Medal/Caldecott\\_Medal\\_and\\_Honor\\_Books,\\_1938-Present/Caldecott\\_Medal\\_and\\_Honor\\_Books,\\_1922-Present.htm](http://www.ala.org/Content/NavigationMenu/ALSC/Awards_and_Scholarships/1/Literacy_and_Related_Awards/Caldecott_Medal/Caldecott_Medal_and_Honor_Books,_1938-Present/Caldecott_Medal_and_Honor_Books,_1922-Present.htm), September 25, 2003

Pottery Photo: <http://www.rumnut.com/pottery/gallerye.htm>,. October 16, 2003

TEKS 3<sup>rd</sup> Grade: <http://www.tea.state.tx.us/teks/index.html>, September 25, 2003

TEKS 4<sup>th</sup> Grade: <http://www.tea.state.tx.us/teks/index.html>, September 25, 2003

<http://www.ces.ncsu.edu/depts/hort/consumer/hortinternet/youth>, October 9, 2003

<http://www.camdenchildrensgarden.org/>, October 7, 2003

[http://www.childhoodreading.com/Edmund\\_Dulac\\_and\\_Gus/Sleeping Beauty.html](http://www.childhoodreading.com/Edmund_Dulac_and_Gus/Sleeping_Beauty.html), September 30, 2003

<http://www.randomhouse.com/kids/catalog/display.pperl?isbn=030710432>