gardening with children

My summers at Beanstalk Children's Garden

by Vicki L. Stoecklin

There has been increased interest in recent years on gardening with children and a variety of programs have been started to support different types of programmatic goals. Whether you are working with preschool children in a community garden setting or in a child care setting, children from a summer camp starting their own gardens, or elementary-aged children creating gardens on-site, the goals of a gardening program are similar among program types and the ages of children served. Goals of gardening programs include environmental stewardship, personal growth/social skills, an integrated learning environment, nutrition/health, science education, practical living skills, and just plain fun (Ocone, 1990).

How the goals for your gardening program get implemented will depend on the ages of the children in your program. Developmentally appropriate gardening programs look at how to base their activities on sound principles of child development and learning. These principles are based on years of extensive research with young children and are used by professionals in the field of early education. Many current gardening books on the market provide a variety of different types of activities. However, they give very little support to teachers or horticulturists on how to understand the developmental needs of children and how to adapt activities to meet their needs.

This article will use my past volunteer experiences at the Beanstalk Children's Garden to offer concrete examples of developmentally appropriate gardening. The Beanstalk is part of the Kansas City Community Gardens, a non-profit urban group that assists low-income families and community groups in learning how to grow their own food. The Beanstalk is open from June to October and is available to center/school groups and families. Garden areas include vegetable gardens, fruit gardens, herb gardens (both medicinal and culinary, seed/grain gardens, a curiosity garden, and a water garden (guaranteed to soothe even the rowdiest 12 year old).

Philosophy of developmentally appropriate gardening at the Beanstalk

Children are active learners. The first principle and an important foundation for developmentally appropriate gardening is understanding that children are active learners. The best teaching occurs when the emphasis is more on joining the child in hands-on interaction, play, and discovery than on imparting knowledge. Children have a natural curiosity that requires direct sensory experience rather than conceptual generalization. A tendency of adults is to create activities from the adult perspective rather than finding ways to adapt adult activities to children's needs. If we as adults fail to provide an engaging hands-on experience for children, they will find their own way to interact with the garden, often in inappropriate ways. I have experienced this phenomenon many times at the Beanstalk Children's Garden:

Whenever I started a garden tour, if the tour did not include enough 'hands-on' experiences like stopping to collect, touch, taste, and smell, I quickly lost the interest of the children. They then found their own way to interact with

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the garden in less acceptable ways like balancing on the garden rails, running through the beds, and wandering to the next available space.

Development occurs in an orderly sequence. The second principle of developmentally appropriate gardening is understanding that development occurs in children in an orderly sequence during the first nine years of life. All domains of development — physical, emotional, social, language, and cognitive — change in a predictable way. Knowledge of typical child development can provide a framework to guide teachers and horticulturists in preparing the learning environment and planning realistic goals and objectives for your program. Age-appropriate gardening activities take into account children's differing cognitive capabilities and psychological needs. Horticulturalists and newer teachers may find the charts in *Basics of Developmentally Appropriate Practice* useful in understanding developmental norms for preschool children.

At the Beanstalk we grow and collect peanuts to grind into peanut butter. Since children's arm strength varies by age, I always make sure that I have other 'hands-on' activities like washing and sorting for any child who can not turn the grinder.

Offer experiences that stimulate children's development. A third principle of child development that is appropriate for gardening activities is providing experiences and activities that stimulate children's development in increasingly complex and organized ways. Children under age seven or eight are extremely visual in their orientation to the world partially because they do not read or read well, depending on the age of the child. A pitfall is to rely too much on verbal explanations of concepts rather than using visual representations of the same concepts, such as using pictures.

I made this mistake myself with a group of eight year olds when I asked them to make rows for planting without a visual prop. They did not fully understand the concept, much less know how to implement it in the soil as a team planting a row together.

Short-term memory and information processing improves in six to eight year olds in comparison with preschool children, however these skills are far from mature. For example, the adult capacity for short-term memory is seven chunks or bits of information. For preschoolers, five chunks of information, while seven year olds can usually retain six chunks of information (Bredekamp & Copple, 1997).

Consider how children will practice their newly acquired skills. A fourth principle of developmentally appropriate gardening looks at how children will be able to practice newly acquired skills from gardening. Since research shows that children's development occurs more rapidly with practice, how can we expand our gardening scope to include others who influence the child's choice of activities? How can horticulturists support teachers in the classroom and how, in turn, can teachers support parents who are with their children other parts of the day and evenings? Activities chosen and shared with teachers and parents must include not only information on the activity itself but why it is important and how it can be implemented. For example, it's not enough to send a child home with a seed. We must include an explanation about what children learn from planting seeds, a small baggie of potting soil, and maybe a peat pot or information on what other types of recycled materials could be used as a pot. Many parents would not have the time or money to buy soil or pots, but may participate in the activity if it is fully explained to them and they are provided with the necessary resources. Developmentally

appropriate gardening looks at how to support the child within the context of the family. Working at the Beanstalk, it was easy to spot those children whose parents or teachers exposed them to the natural world. These children were far more comfortable with the plant life and critters of our gardens.

Support children's learning modalities and multiple intelligences. The last principle of developmentally appropriate gardening is understanding that children have preferred or stronger modalities of learning. A variety of activities will support children with various learning styles: visual, auditory, and tactile/kinesthetic. Howard Gardner has taken this concept a step further by identifying at least eight multi-ple intelligences in humans. Multiple intelligences include linguistic, logical-mathematical, musical, spatial, bodily kinesthetic, intrapersonal, interpersonal, and naturalistic (the ability to read the natural environment). Offering a variety of activities will allow children time to use their preferred modes of learning, as well as provide time for them to develop in areas where they might not be as strong.

Goals of Developmentally Appropriate Gardening

Now that we have explored the philosophy of developmentally appropriate gardening, let's go back to our gardening goals and more fully discuss how these goals can be implemented with different age groups.

Environmental Stewardship

An important goal of a gardening program is teaching environmental stewardship. Environmental education needs to start at an early stage with hands-on experiences with nature (Moore & Wong, 1997). Our tendency as a society is to assume that learning starts with public school; however, research clearly shows that value formation begins in children ages two, three, and four. It's difficult to teach children regard for nature at ages seven and eight if they haven't had any time to explore or understand what the concept means. Experiences with nature have taken on new meaning in our society when children have very little opportunity to explore the wonders of plants, bushes, trees, and flowers. Many schools and child care facilities are an asphalt jungle and many new homes have very little landscaping other than sodded lawns.

Additional research in the new fields of eco-psychology and evolutionary psychology also shows that if children do not have time to explore and fully understand nature, they are at risk of developing what is known as *biophobia* or an aversion to nature.

I saw this phenomenon manifested at the Beanstalk. Whether the children came from the suburbs or inner-city schools, many had little to no understanding of the natural world. Their first impulse when confronted with natural elements, such as insects, was to first be afraid and then to kill whatever they had observed. Children must be allowed time to interact with nature and living elements to develop empathy before they can understand it well enough to want to preserve it. We don't want children to forget about the rainforest, but children need an innate understanding of the plants and animals in their own backyards. For example, the children at Beanstalk were delighted when our digging unearthed a Missouri shrew. None of the children had even seen a mouse before, so this time was the 'teachable moment' to introduce the differences between a mouse and a shrew.

Personal Growth and Social Skill Development

A second goal of a gardening program is providing activities for children to practice personal growth and social skills. Children are so proud of all of their accomplishments in the garden, whether it is as simple as watering, collecting seeds, or growing vegetables. Many teacher-directed public schools provide very little opportunity for children to work together, yet the skills of creativity, problem solving, and teamwork are needed in the real world. The garden provides many opportunities for children to work together cooperatively as a team to solve problems.

Multidisciplinary, Active Learning

The third goal of a gardening program is providing for multidisciplinary, active learning. Gardens are unsurpassed in providing a hands-on approach to seeking information, observing changes, and learning skills. Gardens are constantly changing and highly attractive learning labs. While most teachers and horticulturists tend to stick to science and ecology lessons, the garden can also be used as a springboard for:

Tips on Gardening with Children

- Start small so that you can help children achieve success and not feel overwhelmed.
- Follow the child's lead. Even when playing in soil the child is learning.
- Use child-sized tools for planting and digging.
- Keep safety in mind; test your soil and use only non-poisonous plants.
- Focus on inclusion; accessible pathways and raised beds can help make your garden compliant with the Americans with Disabilities Act.

- Math skills like charting, mapping, graphing, and counting
- Reading and writing skills like dictation, creating signage, storybook making, and reading books
- Social studies skills like foods of other cultures, feeding the homeless, and map-making
- Art skills like designing the garden, identifying colors and patterns, creating drawings, painting, paper-making, and creating collages.

Each of these garden activities will be based on the differing capabilities and needs of the children for which they were created.

Nutrition and Health

A fourth goal of a gardening program is teaching about nutrition and health. Children love to try new foods, especially when they have grown the food themselves or at least been involved in collecting the food source. A gardening program allows children the opportunity to make food choices based on new experiences and learn about nutrition first hand.

Science Education

A fifth goal of gardening programs is providing opportunities for science education. Children can learn about interdependent plant and animal needs, photosynthesis, seed production, pests (both harmful and beneficial), and composting.

A Fun and Valuable Skill

The last two goals for gardening are really the most important. Gardening is fun and can be a skill which can be used later in life in many ways.

I have received thank-you letters from some of the children who came to the Beanstalk Children's Garden. The letters often speak about doing gardening at home now that their interest has been sparked. The best part of the letters is that all the children talk about how much fun they had doing simple things like tasting fresh beets or cherry tomatoes, digging a sweet potato, picking berries, or just watching the fish in the small pond. But, I think that my new friend Cherie, a second grader, says it more eloquently:

Dear Vicki,
I had so much fun! The cherry tomatoes were the best! I thought the beets were kind of good. I never really liked beets that much. I'm going to ask my mom to have my own garden. If she says yes, I'll use the seed I picked.
Thanks, Cherie

As someone who loves to garden, I've found that their enjoyment is equal to my own. In introducing young people like Cherie to the pleasures of digging, planting, and harvesting, I affirm my own love of nature and the joys that come with gardening.

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