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Wild Beginnings:
How a San Antonio initiative instills the love of nature in young children

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Abstract

This paper describes an environmental education initiative called Starting out Wild (SoW) designed for toddlers and their caretakers. The program, developed by staff and volunteers of a city parks department, engages children ages 1-3 and their parents and caretakers through outdoor learning experiences. We suggest that environmental education learning for young children should focus on nurturing positive emotional relationships with nature and keep in mind practices that are appropriate to the children's development. In this article, first we offer a rationale for situating early environmental learning in an affective approach. Next, we examine learning about the environment in the context of developmentally appropriate practice for young children, drawing on guidelines developed by the North American Association for Environmental Educators (NAAEE) and the National Association for the Education of Young Children (NAEYC). Then we describe the San Antonio-based SoW program, including discussion of a sample lesson. We conclude with recommendations for practice.

Keywords: environmental education, nature learning, early childhood, toddlers, family involvement

Taking a nature walk with an enthusiastic group of toddlers is a treat. As children spontaneously explore, their wonderings immediately translate into hands-on experiences that fill them with joy. Soon, they immerse themselves in the mysteries of fallen leaves, hidden insects, animal tracks, and birds' songs. In doing so, young children learn, but they also begin to connect with and to love nature. In this article, the authors describe Starting out Wild (SoW) a San Antonio environmental education initiative designed for children ages 1 to 3 that seeks to capture a stage of children's development when attitudes towards nature are being formed (North American Association for Environmental Education (NAAEE), 2010). Starting out Wild (SoW) engages young children and their caretakers, often their mothers, in experiences that draw on children's natural curiosity and attraction towards nature, while offering a foundation for learning. We argue that environmental education experience in early education settings should provide opportunities to develop affection for nature in the context of developmentally appropriate activities. Initially, we offer a rationale for an affective approach to early childhood environmental education. Next, we place environmental education within the context of developmentally appropriate practice for young children. Then, we describe Starting out Wild, including an example of an implemented workshop. Finally, we offer recommendations for practice.

Rationale for an Affective Approach to Early Childhood Environmental Education

Affect is a term used in psychology to distinguish emotions and mood from thinking and behavior (Harlan & Rivkin, 2012). Although researchers have long argued that emotions pique curiosity and interest in learning, formal environmental education instruction, just as formal science instruction, traditionally has not embraced an affective approach. Harlan and Rivkin (2012) draw on brain research to argue that "emotions are fundamental to our ability to focus attention, and they are critical to how we process, use, and store information" (p. 6). In fact, many researchers believe that activating the affective domain must precede cognitive activity for learning to take place (Chawla, 2006, 2007; Harlan & Rivkin, 2012; Kellert, 2002, 2007; Noddings, 1992; R.A. Wilson, 1996).

Affect, as described by Iozzi (1989), is the "the key entry point to learning and teaching", (as cited in Kellert, 2002, p. 126) and is addressed by the North American Association for Environmental Education (NAAEE) in their guidelines specifically targeting EE for early childhood learners (NAAEE, 2010). A section explaining the differences between EE for younger and older learners states that "the task of environmental education for young children is to forge the bond between children and nature" (NAAEE, 2010, p. 4).

The need to promote a child-nature bond in early childhood is documented in research suggesting that early exposure makes a difference (NAAEE, 2010) and children's attitudes towards nature are significantly influenced by the presence of empathizing adult role models. Chawla's (2006, 2007) interviews of 56 environmentalists in Norway and Kentucky revealed the strong influence of childhood experiences in establishing positive and active attitudes toward nature in adulthood. Kahn (2002), in his studies of five sets of children in various urban and rural settings in three countries, also said that the roots of what he called environmental generational amnesia (forgetting that the current degraded state of our environment is not how it always was) are situated in childhood, so addressing it must begin there, as well.

The presence of adult role models not only helps establish a loving relationship between child and nature, but also between child and caregiver, which Chawla (2006, 2007) found to be one of the two strongest indicators for positive attitudes toward the environment among adult environmentalists (see also Carson 1956; Noddings, 1992 on the role of adults). Kahn (2002) suggested that by sharing their own stories with children, adults could help children conceive of a healthier environment that may no longer be present, but was at one time. For the community, such sharing helps recapture lost memories and raises the benchmark of what a healthy environment should be, rather than relying solely on a possibly more degraded current state.

In practical terms, an affective approach to learning is evident in SoW, a program in which adults share their own wonder, curiosity, respect, and caring for nature by verbalizing their observations, by listening and responding to children's remarks, and by observing children as they engage in developmentally appropriate activities. Thus, the SoW facilitators serve as role models for the young children, as well as their caregivers.

Using Developmentally Appropriate Practice in Environmental Education

An important guideline in the development of environmental education programs for young children is the purposeful infusion of developmentally appropriate activities that take place in the outdoors (Wilson, 1996). According to the principles of Developmentally Appropriate Practice (DAP), developmental stages must be considered when planning learning experiences. Gayford (1987) and Tilbury (1994) referred to children's critical sensitive periods, which provide windows for certain types of learning and can affect how children develop as they mature in various domains, including the ecological self (as cited in R.A. Wilson, 1996, p. 121).

By understanding developmental periods, teachers can choose appropriate activities, language, literature, and other resources, as well as help parents to support their children's growth. General DAP principles accept that learning moves from simple to complex, concrete (or specific) to abstract (or general), and iconic to symbolic (Kostelnik, Soderman, & Whiren, 2011; NAEYC, 2009). In the realm of EE, Kahn (2002) found that children move from anthropocentric perspectives (human-centered) to biocentric thinking (focusing on the "intrinsic value of nature") as they mature (p. 98). This insight can help teachers develop lessons that introduce ideas from a self-

oriented perspective, which is typical and easier to grasp for most young children, while introducing and nurturing nature-oriented thinking.

Another developmental consideration helps plan for appropriate materials and spaces. Heerwagen and Orians (2002) relied on evolutionary adaptations to explain that toddlers and preschoolers prefer small objects and semi-enclosed spaces. The smaller spaces (in nature, these can be under a tree or behind a hedge) offer a greater sense of protection and security. The preferences for smaller objects help narrow or localize the field of operations, which would have provided an evolutionary advantage for survival by discouraging wandering off since smaller objects are often easily found close to home. They argued that factors such as increased mobility (moving from sitting to crawling, walking, and running) determine which environmental inputs are more valuable for survival and hence, interesting, at various stages of development. Because most toddlers are mobile, they enjoy discovery and direct access to objects found in their fields of operations.

The Need for Direct, Unstructured, and Everyday Experiences in Nature

Indirect and direct experiences of nature are useful and common. Teachers and parents use books, videos, photographs, artwork, models, and other such tools to expose their children to nature. As Kellert (2002) said, such vicarious or indirect experiences can be meaningful, however, not as a substitute for direct experience. Studies show that the decline of direct, unstructured contact with nature in industrialized settings in favor of indirect and planned activities is a concern for environmental educators (Cohen & Horm-Wingerd, 1993; R.A. Wilson, 1996). Educational researchers specifically advise teachers and caregivers to provide time and opportunity for direct, hands-on, and unstructured experiences outdoors (Chawla, 2006, 2007; Cohen, 2012; Kellert, 2002; Noddings, 1992).

Direct experiences are also supported by emphasizing the local and ordinary experiences of nature, rather than seeking the exotic (Carson, 1956; Kellert, 2002). Looking for pebbles in a neighborhood lot, observing ants or worms in the backyard, or taking walks regularly in a community park are examples of local and everyday experiences, which are found to have more enduring effects on building positive relationships with nature than the dynamic and exotic experiences that come from visiting national parks or watching television shows about great white sharks. (Those are valuable in a different way, but the importance of the ordinary should not be overlooked.) Another benefit of seeking the everyday in nature, and arranging for it in lessons and activities, is that it is to be found everywhere. “Bugs, pets, plants, trees, wind, rain, soil, sunshine…” are ubiquitous and available to all children (Kahn, 2002, p. 113). It is this love of everyday nature that SoW seeks to nurture through its exploration of the local environment.

The SoW initiative

In 1983 two West Coast organizations introduced Project WILD (Wildlife In Learning Design) for K-12 educators with the purpose of providing information, resources, and activities about wildlife that are grounded in scientific and educational research. The WILD programs also align with the EE guidelines set forth by the North American Association for Environmental Education (NAAEE, 2011) by maintaining an interdisciplinary and educational focus and avoiding advocacy. (For a detailed history of Project WILD and its sponsors, see CEE & Project WILD, 2013, pp. vi-x and the national website: http://projectwild.org/).

As the need for an early childhood version of EE was realized, coordinators from six states (Alaska, Arkansas, California, Colorado, Idaho, Minnesota, and Utah) began to adapt Project WILD activities for young learners. In 2011 the Growing Up WILD manual for educators of children aged 3-7 years was published. Its goals included building on young children’s innate “sense of wonder about nature” using direct experience in nature (Council for Environmental Education (CEE), n.d., b). Growing Up WILD activities align with Head Start learning standards, as well as recommendations for developmentally appropriate curriculum from the National Association for the Education of Young Children (NAEYC) (CEE & Project WILD, 2011). While Project WILD and Growing Up WILD curricula provide environmental education activities and programs for children ages 3-18, toddlers continue to be

an overlooked segment of the population. Just as GUW adapted the Project WILD activities for young learners SoW is extending that curriculum for even younger children.

Starting out Wild Program in San Antonio

The City of San Antonio Natural Areas have been offering the Growing Up WILD programs (GUW) for several years but in 2002 Peggy Spring, Education Coordinator, saw a need to engage toddlers and their parents through the city's nature programs. Although Spring had experience working with children of various ages, she tapped one of her regular volunteers Wendy Drezek, an expert in infant and young children's education, to develop a developmentally appropriate parent-child nature program for toddlers.

"I didn't really think it would work at first, but I was happy to put something together," recalled Drezek, over a lunch meeting with new SoW facilitators-in-training (Drezek, 2014). They used the GUW curriculum as a framework, since it was familiar, respected, and successful. At the time of publication, Drezek's 24-unit curriculum includes many topics from GUW as well as others focusing on Texas, including bats, cactus, bees, and flowers, (W. Drezek, personal communication, April 3, 2015). Like other San Antonio Parks nature programs, the SoW sessions are offered free of charge.

Program Launch

Spring launched SoW in February 2013 at Friedrich Wilderness Park with a lesson about bears. After four months, the July session filled to capacity with nearly 20 children, so she added a second session that month. The high level of enrollment continued even after the summer vacation surge ended. In December, she found both the sessions were again filled with 15 children each. She also realized that 13 students was more manageable, but often enrolled up to 15. As she tried to manage a growing waiting list, Spring decided to increase the number of SoW sessions to three per month from February 2014, and added a fourth day to accommodate two mothers' groups, with a new theme each month.

Furthermore, in March 2014 Susan Campbell, San Antonio Parks and Recreation Education Coordinator for Phil Hardberger Park, launched SoW at her location. By the end of March, pre-registration for her first three months of classes (March-May) was already at capacity with 15 students per class. With students already enrolling by early February, Campbell knew she needed her own crew of teachers.

SoW Facilitators Training

The SoW program has two audiences – the children and their parents – so its facilitators are trained to think of both groups when they lead classes. At training for new SoW facilitators at Phil Hardberger Park, Campbell and Drezek explained to volunteers that the program's goal is to nurture "rich relationships… to the world of nature " in children and their parents (Drezek, 2014). To that end, many facilitators are volunteers drawn from the Texas Master Naturalists program, who are required to complete nearly 40 hours of training in nature learning approved by the Texas Parks and Wildlife Department (TPWD & Texas A&M Agrilife, n.d.).

As a toddler/parent program, SoW seeks to capitalize on parents' intrinsic motivation to involve their children in nature-based activities. As primary caregivers, parents are in a crucial position to continue, "facilitating their children's adventures in the natural world" (Drezek, 2014). Teaching parents and providing a rationale for each activity is crucial as they learn developmentally appropriate ways to explore nature in any setting, including their own backyards and areas removed from the SoW experience.

Spring elaborated, adding that SoW's emphasis is on "getting children connected to nature and getting parents involved. We're more interested in the process than the product. We want the child manipulating the materials." She pointed to a session about spiders for which they chose clay and pipe cleaners as the media for children to make models of spiders. Her intention was to let children experience the texture of the clay as they squished, pressed, and rolled it. Spring recalled how sticking pipe cleaner legs into the clay bodies was a challenge for many

children, supporting the growth of their motor skills and providing direct sensory experiences (Spring, personal communication, 2015).

In keeping with SOW's hands-on approach, the training included a sample lesson so facilitators could experience the activities and their flow. Since each lesson includes several song and movement activities, Drezek and Campbell lead the volunteers through several songs with movements and dancing, as well as a brief walk outdoors.

Lesson Format and Themes

Each SoW lesson begins and ends with a song, which establishes a routine for the children. A lead teacher and two or three volunteers facilitate lessons for a typical class of 13-15 children and their parents, although several regulars come with grandparents or other family members. Each hour-long lesson includes a read-aloud, hands-on exploration of real natural objects and models, crafts, songs with music-movement activities, and a snack – all related to the monthly theme. (See Figure 1. Appendix A contains a sample lesson.)

Figure 1. Exploration of models (plastic ants in sand boxes) real objects, living organisms (worms)

The highlight for many children, and a vital part of every lesson, is the nature walk. SoW facilitators, toddlers, and caretakers amble at a relaxed pace over a short, easily navigable trail (See Figures 2.). After a few visits, the children are familiar with the trail since they use the same one each time. They squat and probe, looking for items related (or unrelated!) to the lesson's topic. (See Appendix B for themes.) Both Park educators Susan and Peggy locate most of the activities outdoors. (S. Campbell, personal communication, February 28, 2014; P. Spring, personal communication, March 20, 2014).

Figure 2. Nature Walk – looking for worms and ants

An evident outcome of SoW`s nature walks has been caretakers' perception of themselves as key exploration partners and facilitators of outdoor direct experiences for their children. A mother who has brought her son and nephew for eight SoW sessions remarked that Starting out Wild helps kids and parents learn how to get outside,

what to do outside, and forms a base knowledge of nature that parents and children can build on when they get back outside on their own. Similarly, another parent commented: "We play outside a lot, and now I will point out leaves and trees and the textures for him to explore. Also, he really liked the recycling lesson, so we will pick up clean trash when in parks or outside on walks."

In addition to the nature walk, activities such as read alouds and theme-based snacks are inviting to the children, as seen from this parent's feedback about her two-year-old son:

> *"[He] continues to be somewhat reserved when we first join the group, but when a volunteer brings out a book, he is instantly engaged. I would say that the story time is [his] favorite activity except that he likes the nature walks at least as much, if not more. He quickly works his way to the front of the group and would walk much further than the planned route if we did not herd him back to the classroom area."*

Furthermore, the parent added that the hands-on activities offer opportunities for toddlers to experience various textures: "He was utterly dismayed about getting paint on his hands while painting with a feather, but he loved digging his hands into the dirt to fill his pot when we planted seeds."

A Peak into a Lesson on Trees

Living In a Tree, detailed here, was a lesson developed and implemented by the researchers adhering to the standard SoW format: Objectives and four-15 minute segments (welcome and story, nature walk, activity and snack, and closing). All lessons include a literature connection and a parent handout encouraging participation during the lesson and follow up at home.

Objectives. In the Living in a Tree lesson the researchers wrote two sets of objectives using the original SoW lesson as a guide and focusing on building positive emotional attachments to nature. In this case, children focused on the potential relationship with a tree, its size, location, and the view of a tree as shelter for other organisms. The parent's objectives also placed emphasis on ways to promote the nature-language connection (see Table 1).

Table 1:
Objectives for Living in a Tree lesson

Objectives for Children	Objectives for Parents
Trees are our friends/ We love trees	Child and parents can enjoy nature together.
Trees are big and small	Questions and words support children's language development
Trees are outside. (Outside/ inside)	
Who lives in a tree? Bird, spider, squirrel…	

Welcome and Story (First 15 minute segment). The lesson began indoors with the facilitators singing a welcome song greeting each child by name then introducing the day's theme using songs and movement, related objects to explore, and a book. Parent participation was supported with PowerPoint slides with song lyrics and questions to ask as children explore the items. The ample floor space and nearby chairs also invited parents to sit with their children and join in the observation of leaves, twigs, seed pods and subsequently participate in a read aloud. (See Figure 3.)

Figure 3. Parents and caregivers join children on the floor during a read aloud.

Nature Walk (Second 15 minute segment). Then, the entire group headed outdoors to explore a nearby trail. Although the children and caregivers were invited to look for certain objects related to trees, free exploration on the familiar and easily navigable trail was always encouraged. During the tree lesson, children explored baggies of natural objects such as bark, twigs, mulch, acorns, and a variety of leaves. Once at the trail, they were encouraged to locate similar items along their path. Using cue cards (see Table 2), the presenters encouraged parents to initiate or extend conversations related to the experience.

Table 2:
Parent Cue Cards Sample Content

Words to develop language:
- Outside / inside (We are going outside.)
- Under (There are leaves are under this tree!)
- Big/ small (and other describing words for what we see, hear, feel…)
- Rough/ smooth (How does the bark feel? The acorn, the leaf?)

Thoughts to spark a conversation:
- Which tree is your special friend?
- What do you think this is?
- Do you see anything that is brown? Green?
- What is the smallest thing in here? The biggest?

Activity and Snack (Third 15 minute segment). The next part of the lesson took place outdoors – a hands-on activity and healthy snack. The loose structure of the entire lesson allowed children to proceed at their own pace. During the tree lesson, children enjoyed scooping soil into cups, pushing seeds into it with their fingers, and then watering them with plastic pipettes. A parent reported back the following month that her child was so excited to see the emerging shoots as they cared for their bean plant at home.

Closure (Last 15 minute segment). The final activities include a good-bye song, providing time for families to linger, finish snacks, and wrap up activities. As they departed, parents were given a handout recapping the day's theme and learning including song lyrics or text for a foldable book. (see Table 3).

Table 3:
Information for Parents (excerpts)

Literature Connection *The Busy Tree* by Jennifer Ward (2009). New York: Marshall Cavendish.	Notes about Learning Given to Parents Early childhood is a powerful time for children to build connections with nature, and one of the best ways to do so is by exploring the areas in your own community, such as backyards and local parks. See how the bee is helping the flowers by carrying their seeds? See how the flowers are helping the butterflies get their food? See how the tree helps us by giving us shade? See how we help these plants when we give them water? These positive emotional relationships are the seeds for a mindset of learning in the future, and parents are the first role models for their children! Thank you for being part of this wonderful community of learning!
Songs from the Lesson (Twinkle, Twinkle tune) Trees are big and trees are small Trees can be so very tall I love my tree My tree loves me Can you help me find my tree? Trees are big and trees are small Trees can be so very tall	

IMPLICATIONS AND CONCLUSIONS

Initiatives such as SoW in San Antonio are valuable in different ways: First, they confirm the need for environmental education programs specifically for toddlers, a segment of the population often left unattended. Second, they confirm the key role that adult role models play in establishing affective ties with nature. Third, given children' s inherent inclination to explore their surroundings, they point to the need to design activities that actively engage children's senses in developmentally appropriate ways. Finally, the SoW lessons include elements of choice and decision-making by the child, providing room for the children's voices as they construct relationships with nature.

The need for environmental education programs for young children is evident. The rapid growth of SoW sessions in San Antonio and the expansion of SoW sites to locations that are more convenient to participants in other sections of the city are evidence of parents' willingness to invest both their time and effort to expose their children to the outdoors in semi-structured formats. Although this initiative currently reaches a limited number of children whose middle and upper middle class parents can afford transportation and time, an added goal would be to reach the immense number of children from low-income families who do not have the transportation or the means to participate and are subsequently excluded from these experiences.

Because SoW requires the presence and participation of an adult along with the child, we suggest that environmental educators must deliberately infuse their programs with components that encourage parent-child conversations and actions that emphasize and model caring behaviors towards nature. With this in mind, environmental educators must provide a rationale that informs parents about the purpose of the activities and suggestions to extend conversations and caring behaviors to settings removed from the original experience.

Furthermore, EE education programs for young children must include activities that engage children's senses in developmentally appropriate ways through experiences that progress from concrete to abstract and simple to complex, predominantly favoring a "hands-on" approach. SoW's approach is to nurture young children's (and their parents') connections to nature. The NAAEE guidelines for early childhood specifically distinguish between the

more structured, skills and academic orientation of instruction for older children and the need for "development of individual feelings, beliefs, and inner unity with nature that are so critical in the early years" that forms the core of their approach for very young children (NAAEE, 2010, p.3). The NAEYC also cautions against the practice of "downward mapping," which involves simplifying the curriculum developed for older learners, rather than creating one that is grounded in research about early learners (NAEYC, 2009, p. 4)

Based on research from the fields of environmental education, educational philosophy, and early childhood education, there is a pressing need to address the emotional landscape of young children if educators desire to nurture a positive relationship with nature (Ardoin 2006; Carson, 1956; Chawla, 2007; Kellert, 1993; McVay, 1993; White & Stoecklin, 2008; Wilson, 1993). Moreover, many researchers argue that advancing an academic focus in learning too early can actually hinder the strong positive experiences that will support future, long-term learning (Harlan & Rivkin, 2012; Osborne, Simon, & Collins, 2003).

Finally, play is critical to young children's learning. Play, by definition, offers choice and pleasure, along with opportunities for intrinsically motivated learning and exploration. These findings support the need to adopt an early years EE program like SoW that provides a developmentally appropriate and affective approach to learning in and about nature.

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APPENDIX A
Sample lesson

Mighty Ants

First 15 Minutes

Gathering: March around mats to the 'The Ants Go Marching' , look at bug cubes; ant books (Thinking Like an Ant, Ant Cities, etc.), SAPAR ant materials=photos, puzzle, models, use multi facet lenses to see Ants Eye View, follow path of plastic ants, build an anthill from dirt or sand, sign in families, give song handouts and name labels.

Focus: Hello Friends, names

- Ants work together—1,2,3 (put up 1,2,3, fingers)
- Ants live in a colony!
- (Spread fingers and bring both hands together.)

Learning:

- Show 3 paper plate (head, thorax, and abdomen) and pipe cleaner (6 legs and 2 antennae) model of ant body parts. Compare and contrast with spiders. Review exoskeleton by tapping on skull, elbow and knees. Use balloons to pretend to communicate. Explain that ants live in groups and cooperate. Different ants have different jobs. Assign "jobs" to toddler ants.
- Movements to teach body parts--Sing the Head Thorax song to Head, Shoulders, Knees and Toes
- Head, thorax, abdomen, abdomen (2X) touch parts
- 6legs, some wings and exoskeleton –3 fingers each hand, 2 fingers each hand, tap skull
- Head thorax abdomen!
- Head, thorax, abdomen, abdomen (2X)
- Big eyes, small size, 2 antennae too –cupped hands to eyes, two fingers close together, 2 fingers on head
- Head thorax abdomen!
- Read the Hey Little Ant singing story
- Transition—line up like an ant line and walk out to patio.

Second 15 minutes

Walk: Use ant plates to see which foods attracts ants—have plates ready with a shred of bologna, spoonful of sugar, spoonful of jelly, cooked bean—first show a tray of foods. Look for good places to find ants and place the plates there, walk to find ants and ant hills, then return and check plates to see which foods the ants go to. You may want to place plates out in advance and then check them during class. Look for ants on the trail. Back-up for bad weather—have a large paper anthill and ant stickers or stamps to place on the anthill.

Third 15 minutes

Crafts: Make Model Magic ants with pipe cleaner legs and antennae. Have baggies with three balls of Model Magic and 8 pieces of pipe cleaner. Option--2 med-size and 1 smaller Styrofoam craft balls stuffed into a knee-high stocking (clearly indicating head, thorax, abdomen), and 6 pipe cleaner legs.

Fourth 15 minutes

Snack: Be a "colony" and form a line to go to the snacks like ants following to find food. Make (raisin) ants on a (pretzel and cream cheese) log snacks—Transition—use the music to march to the mat.

Closing: Review the story, song, fingerplay and sing the Good-bye songs, give out handouts, and preview coming attractions.

APPENDIX B
SoW Lessons Themes

Table B1
Themes of 2013- 2014 SoW workshops at Friedrich Wilderness Park

2013	2014
February - bears	January - rocks
March - spiders	February - worms
April - worms	March - ants
May - ants	April - trees
June - no lesson	May - growing
July - birds	June - no lesson
August - growing	
September - seeds	
October - leaves	
November - turkeys	
December - recycling	

Table B2
Themes of 2013- 2014 SoW workshops at Phil Hardberger Park

2014
March - ants
April - trees
May - growing
June – no lesson

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