

Connecting Kids and Nature: Lessons to Ignite Learning and Appreciation of the World Around Us

Integrating reading instruction with science activities helped these authors to create a positive connection between children and nature.

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& Judy Williams**

Children today are increasingly plugged into smart phones, tablets, and technology in general which in turn can contribute to an increasing disconnect between children and the natural world. With busy schedules, families may allot less time for free-structured play and learning about nature. An online report from the National Wildlife Federation (n.d.) cites recent studies (Hofferth & Sandberg, 1999; Juster, et al., 2004; Roberts, et al., 2005) which indicate that “the average American boy or girl spends just four to seven minutes in unstructured outdoor play each day and more than seven hours each day in front of an electronic screen.”

In an increasingly technological world, *nature-deficit disorder* remains an issue. Nature-deficit disorder has been described as “the human costs of alienation from nature, among them: diminished use of the senses, attention difficulties, and higher rates of physical and emotional illnesses” (Louv, 2005, p. 36).

The Project

To create a positive connection between children and nature, this semester-long project developed by the authors integrated reading instruction with science activities to emphasize the natural world in the lives of children. This intervention involved the authors visiting an elementary classroom five times over the course of a semester to teach nature and reading activities. Each lesson consisted of a literary component wherein students read and discussed a single issue of *Keeping Texas Wild*, a Texas Parks and Wildlife magazine for children. The purpose of these lessons was to emphasize activities that would necessitate student observation of animals indigenous to the area

where the students currently reside. Focusing on such animals increased the probability that students might encounter the wildlife during random outdoor experiences, thus increasing their interest in nature.

Each child was given a full color copy of the week’s magazine to take home and share with his or her family. Following the literary instruction, students participated in an outdoor activity or observation during which they recorded in a journal both written and illustrated field notes. The students wrote a conclusion of the observation based upon the field notes.

Nature-Deficit Disorder: The human costs of alienation from nature.

The intervention included 10 hours of instruction during 5 instructional sessions that were implemented 2 weeks apart. In addition, pre- and post- surveys were collected to assess students’ attitudes and knowledge about the natural world. Students were also asked to do nature journals. Twenty elementary students were surveyed before and after this intervention.

Even though this intervention focused on elementary children, similar activities could be done with preschool children. Reading to younger children about indigenous animals and providing hands-on experiences with nature

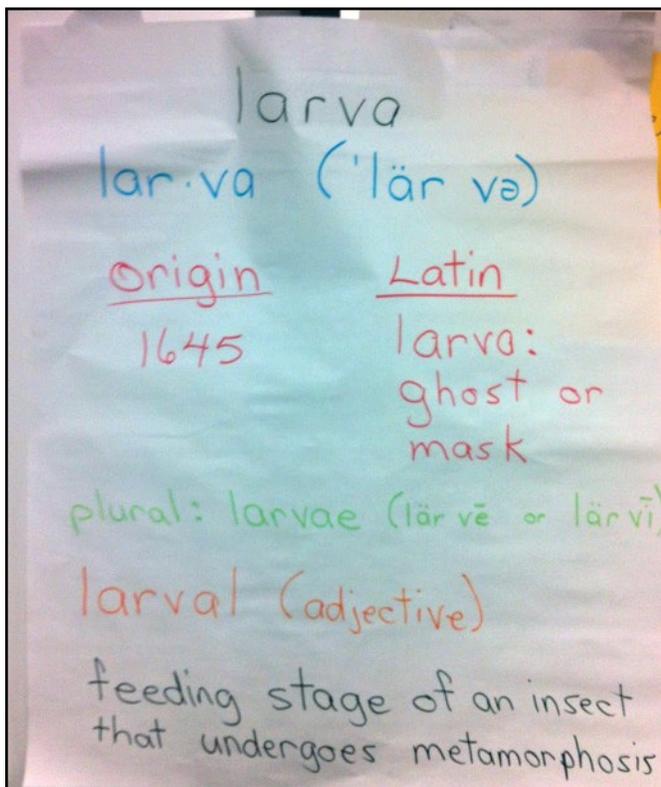


Photo 1

are ways to enhance their understanding of the natural world around them.

Many of the animals featured in the issues of *Keeping Texas Wild* can be found throughout the Southern United States and these issues can serve as helpful resources to any pre-school or elementary teacher. They are a great starting point upon which teachers can build their own collection of resources focusing on animals in their geographic area. Teachers may also wish to contact the parks and wildlife services in their state to determine if similar literature for children is available through their state agency.

The Lessons to Ignite Learning

Mysterious Monarchs

The *first lesson* focused on monarch butterflies. For the first

session, the second author began by teaching the English Language Arts portion of the lesson on key vocabulary associated with the reading, and she led students in reading the *Mysterious Monarchs* issue (Photos 1, 2, and 3).

The second portion of the lesson involved the authors leading the students in observations of actual monarchs. Live monarch butterflies were ordered in advance. When it was time for the lesson, each monarch was carefully placed in a magnified viewer. Each child was given a viewer with a monarch butterfly inside. Students then spent some time drawing and coloring pictures of their butterflies in a nature journal (Photo 4). While the students drew, the second author spoke about the times of the year that monarchs migrate through the students' home geographical location. She also shared with the students how to distinguish a male monarch from

a female monarch by the swollen pouches that resemble black dots on the hind wings of the male.

Once the students finished their drawings, each child took his or her butterfly in the viewer with them outside. Sliced oranges were provided to each student. Students then gently opened the viewers and released the butterflies. Some students put orange juice on their fingers or offered the orange slice to the butterfly so that it did not immediately fly away. The orange slices were helpful in keeping the butterflies around the school so that the students could continue to watch them. After the release, the students returned to the classroom and wrote about what they had learned from the reading, the drawing, and the butterfly release in their nature journals.

Bird Lips

Two weeks later, the authors returned for the *second lesson*. This lesson focused on common birds in the region as well as bird beaks and how they are adapted for specific types of food. The session began with the literary component as the second author introduced key words and their origins. She included vocabulary from the reading such as carnivore, herbivore, and omnivore. The first author followed up with the hands-on activity, *Fill the Bill*, from the *Flying Wild* curriculum guide. This activity emphasized the differences in bird beaks and how they are best suited for certain foods. This was followed by a PowerPoint slide presentation purchased from the Cornell Lab of Ornithology of different bird images that students would commonly see in their home geographical location. As students viewed the images, they took notes in their nature journals. At the end

of the slide presentation, students were challenged to keep a wild bird count from their own backyard. Each student was given a data collection page, and made a birdfeeder from recycled plastic and filled it with birdseed to take home.

Honor Roll

The *third lesson* focused on animals and some plants that are state symbols. Some of the animals highlighted in the reading lesson included the Texas horned lizard, the Mexican free-tailed bat, the armadillo, the Texas toad, and the longhorn. Plants such as the bluebonnet, the prickly-pear cactus, and the pecan tree were also discussed. For the associated activity, the authors asked the local zoo to present their *Texas Wilds* program. This is a zoo-mobile program in which the zoo brings animals to the school. The zoo selected animals that the students might see in the wild in their home geographical location, including a toad, possum, bull snake, and tarantula. Students were allowed to touch the snake with 2 fingers. Upon the conclusion of the program, students washed their hands and then wrote about the experience in their nature journals.

Hanging Around with Bats

The *fourth lesson* focused on bats and common misconceptions associated with these creatures. Insect control and pollination were shared as two positive functions of bats. Prompted by the emphasis in the magazine, the second author also focused the discussion on echolocation and the anatomy of bats. After the key vocabulary and reading lesson, students were given time to draw the anatomy of the bat (based on the picture from the magazine) in their



Photo 2

Photo courtesy of authors

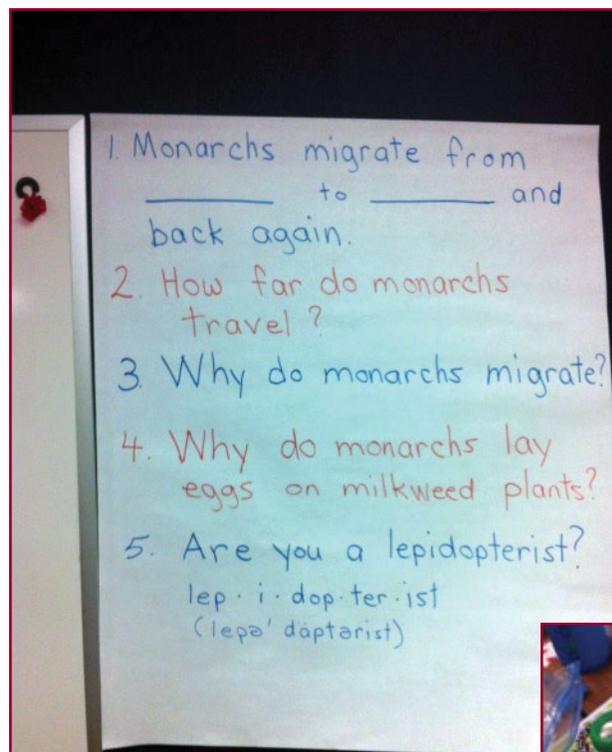


Photo 3

Photo courtesy of authors



Photo 4



Photo courtesy of authors

nature journals. Students then went outside to assemble and fly “Baby Bat” kites that had been purchased for them.

Awesome Ants

The *final lesson* focused on types of ants, the life cycle of ants, and ant anatomy. The lesson began with the reading and vocabulary associated with the magazine. Students were then given time to draw the anatomy of the ant in their nature journals. Three large harvester ant farms were purchased for the students to observe in their classroom. Each table group of students was given a different ant

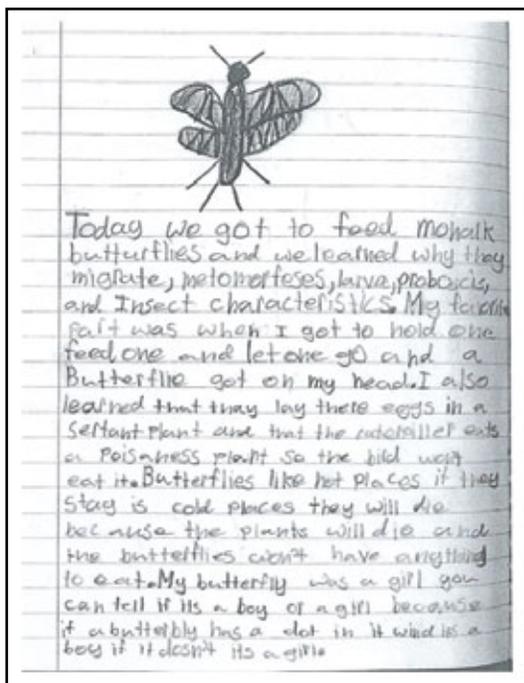
farm, and the ant farms were rotated so each group could make observations of each farm. After observations, students wrote in their nature journals about what they learned from the lesson.

Findings and Discussion

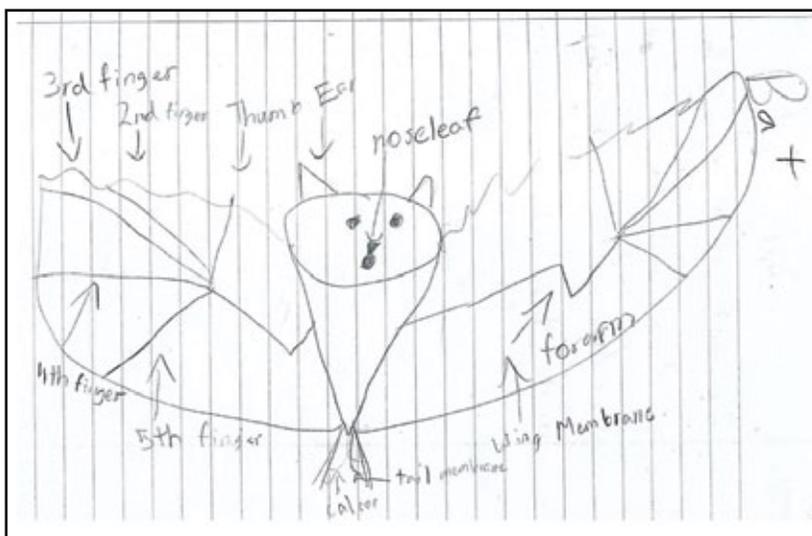
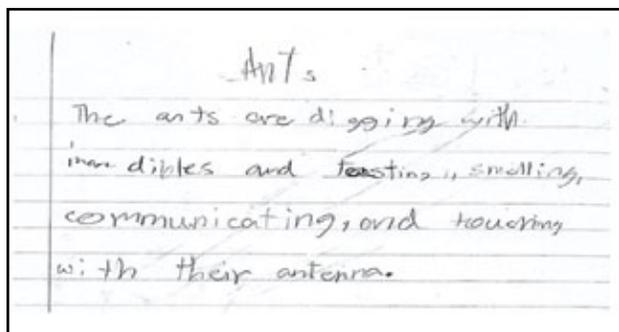
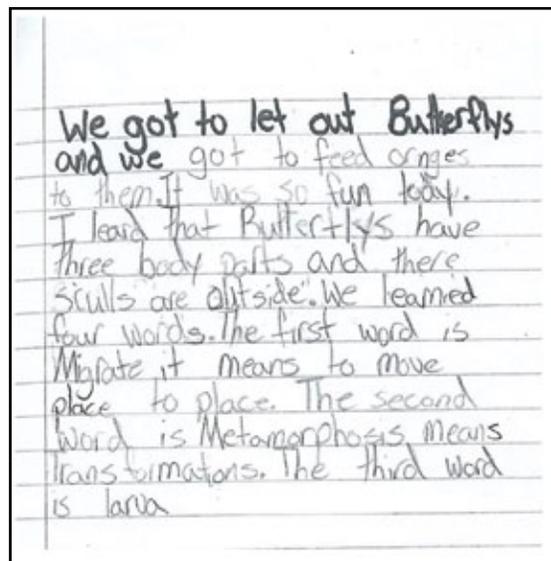
Surveys

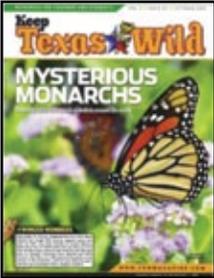
Students were asked to complete the following sentence: “I would play outside more if...” The responses to this statement varied. Examples of the responses included “if I had no video games,” “if the weather was warmer,” and “if I had a treehouse.”

Students were asked to name the animals that they have seen while playing outside or while hiking or camping. By the end of the study, fourteen students could list more animals than they could at the beginning of the study. In addition, fourteen of the students reported that how they spent their time outside had changed since completing the nature activities. Student statements in response to this item included “I look for different animals and bugs.” Another said, “Yes, because I’m always looking for the animals.” A third student stated, “Yes, we have been doing lots of things that are really more fun than just riding a bike.” When the



Student Journals



Lesson topic	Reading	Activity
<p>Lesson 1: Mysterious Monarchs</p> 	<p>https://www.tpwmagazine.com/ktw/media/october-09-vol.2-issue2.pdf</p>	<p>Monarch butterfly observation and release</p> 
<p>Lesson 2: Bird Lips</p> 	<p>http://www.tpwmagazine.com/ktw/media/november-09-vol.2-issue3.pdf</p>	<p>“Fill the Bill” activity from Flying Wild Curriculum Guide - www.flyingwild.org/ PowerPoint of regional bird images purchased from Cornell Lab of Ornithology www.birds.cornell.edu Bird feeders made from recycled plastic. Students were instructed to do a bird count at home.</p>
<p>Lesson 3: Honor Roll- Many state symbols represent the wild side of Texas.</p> 	<p>http://www.tpwmagazine.com/ktw/media/March-10-vol.2-issue7.pdf</p>	<p>Texas Wilds ZOOmobile Program – Local Zoo. The zoo brought a number of Texas animals for the students to observe up close.</p> 
<p>Lesson 4: Hanging Around With Bats</p> 	<p>http://www.tpwmagazine.com/ktw/media/oct-08-issue2.pdf</p>	<p>Drawing of bat anatomy Outdoor activity: Assembled “Baby Bat” kites that were purchased on line and flew them.</p> 
<p>Lesson 5: Awesome Ants</p> 	<p>http://www.tpwmagazine.com/ktw/media/June-11-vol.3-issue10.pdf</p>	<p>Observations and drawings of ant farms</p> 

students were asked what they had learned from the nature activities that they did not know before, one student reported, “I learned many things I did not know before like lots of vocab, and I learned about toads, ants, possums, bats, and tarantulas.” Another student’s responded to this question that he learned “About bats. Monarchs eat milkweed. How to tell a (bird’s) beak by how they use it. Different types of ants. How to make a birdfeeder.” In addition, when asked how often they played outside, six children reported an increase in the amount of time they spent outside at the conclusion of the study.

Student Journals

Students made journal entries consisting of writing and or drawings after each lesson. The journals show the children’s understanding of the hands-on experiences with nature.

Teacher Attributes

To ignite learning and appreciation of the natural world around us, it is important for the teacher to learn about the plants and animals in his or her area. Research can be done on the Internet or at a local library to learn more about indigenous organisms. In addition to factual information, trade books can be utilized to teach children about these animals. The National Science Teachers Association publishes a list of outstanding trade books each year, an excellent resource for selecting age-appropriate books about the natural world. A teacher who shares his or her own interest and passion for the natural world will help develop this interest in young children.

Conclusion

In Richard Louv’s *Science & Children* editorial (2012), he points out that “Schools that use outdoor classrooms and other forms of nature-based experiential education report significant student gains in social studies, science, language arts, and math” (p. 9). These gains, in addition to the possible gains to emotional and behavioral health, make these lessons and those like them a win-win for elementary and pre-school teachers and students. In addition, the lessons described in this article address the *Next-Generation Science Standards* or NGSS (2015). In order to adapt the lessons for younger children, teachers can engage children in conversations after a nature walk or after experiencing the animals and insects. Taking photos with an iPad while children experience nature can also help children recall their experiences. For this project specifically, the lessons look at the crosscutting concept of cause and effect as well as structure and function. The integration of these subjects and the hands-on nature of these lessons have the potential to positively engage children with a knowledge of and respect for the natural world around them.

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About the Authors

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Notice of Annual Meeting

The annual Leadership Breakfast of the Southern Early Childhood Association is scheduled for Saturday, February 13, 2016 from 8:30-10:15 am. This meeting will be held on the last day of the 67th annual conference, scheduled for February 10-13, 2016 at the Hyatt Regency Tulsa in Tulsa, Oklahoma.

During this meeting, the Association will conduct any necessary business as dictated by the Association’s by-laws and recognize those individuals receiving awards from the Association. If you are interested in submitting an agenda item for consideration at this meeting, please forward the information in writing by January 2, 2016 to: Glenda Bean, Executive Director, gbean@southernearlychildhood.org or mail to:

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