Are you concerned that your students have little connection to the natural world? Today's youth are increasingly spending more time indoors and less time outside. As a result, many children have a “nature deficit” (Louv 2005) and little awareness of their role in nature.

In this article, the first author describes how she shared her passion for nature with her sixth-grade students through nature journaling and how her students gained a better understanding of the natural world as a result.

Developing a personal connection to nature

Albert Einstein once said, “Look deep into nature, and then you will understand everything better.” After reading Last Child in the Woods: Saving Our Children From Nature-Deficit Disorder (Louv 2005), I realized that many people have not had experiences with nature that help them develop a personal connection with the environment. Modern children spend most of their time indoors, usually glued to some form of technology. As a result, they have little connection to the natural world.
Science teachers can also contribute to children’s nature deficit, because we typically teach science indoors, which does little to model an appreciation for nature. For example, I teach about the life cycle of butterflies indoors. Students grow the plants that the caterpillars eat indoors. We watch the caterpillars metamorphose indoors. Although this is valuable learning, inquiry-based science needs to be conducted outdoors on occasion to help students make connections to nature and understand the importance of the environment.

As an action-research project, nature journaling helps students make these connections and addresses the Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects (CCSSO and NGA 2010) by incorporating reading, writing, speaking, and listening into the science curriculum. Nature journaling also helps my students increase their understanding of the environment. Here I share with you what I did and how my students’ knowledge about the environment changed.

Using writing to get students outside

To begin, I had students construct and decorate their own nature journals using drawing paper, which they bound using a hole punch and yarn (see Figure 1). Before each nature journaling experience, I gave students an activity or writing prompt to help them focus on nature. Luckily, my school has a fantastic outdoor classroom and an extensive nature trail. (Safety note: Before heading outdoors with students, teachers should be aware of outdoor safety concerns, such as poisonous plants, insects, wildlife, and students’ medical issues; while outside, teachers must adhere to all the school and district guidelines for field trips.) Every Friday, I took my students outside for 30 minutes so that they could observe and write about nature. I found that students looked forward to Fridays because of this special time outdoors. After a few weeks of nature journaling, they began to update me on the weekly weather forecast in case we needed to plan our nature journaling on a different day of the week. They gladly embraced the lessons I incorporated into their nature journaling experiences, such as the activities described in the following sections.

Setting the stage: Leopold’s example

I read selections to my students from A Sand County Almanac: And Sketches Here and There (Leopold 1949) that described animals in detail or dramatic weather events to give students an example of quality nature journaling. As I read the selections aloud, I asked students to close their eyes and picture the scene in their heads. After reading from a selection called “Good Oak,” I gave students the following prompt to practice reflective writing in their nature journals: “Think about what you ate for lunch. What effect did it have on the environment?” Students did not share their responses with others at this time, as I wanted them to be able to personally reflect on their initial thoughts after the next day’s follow-up activity.

I often incorporate Project Learning Tree (2011) and Project WILD (2001) activities into my classroom and use them to help focus students’ writing. The next day, using Project WILD’s What Did Your Lunch Cost Wild-life? lesson, students worked collaboratively to trace a food back to its source (e.g., where did the chicken they ate for lunch come from and what did it take to
really engaged in this activity and named the “geographic features” along their trails after themselves. For instance, features on one pair’s map included the “Sammy D. Desert” and “Frohock Hill.” Next, students “walked” another pair’s nature trail. During this time, students enthusiastically acted as trail guide by pointing out each feature and encouraging the other students to look closely at the “amazing” sites.

**Fine details: Focusing on nature**

Students had often expressed that they were having difficulty finding something to write about during nature journaling. To help them focus, I had students use a toilet paper tube to closely examine an artifact along the micro nature trail. Students peered through the toilet paper tube as if it were a microscope and used this as their field of observation. Students recorded their sketches and observations in their journals.

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**FIGURE 2**
Student example of nature journaling early in the semester

**FIGURE 3**
Student example of nature journaling later in the semester
ture journals. This activity taught students that focusing made it easier to come up with material to write about and sketch in their nature journals. Some students observed small insects moving between blades of grass while others observed decaying plant matter. Students were not graded for the quality of their drawing, however, they were expected to label and describe their sketches in detail.

**Listening and writing with The Lorax**

We watched the animated version of the *The Lorax* to generate student discussion on how living things are affected by habitat destruction and pollution. While viewing the movie, students focused on the question “What changes occurred after the Once-ler arrived?” (The Once-ler is the greedy character created by Dr. Seuss who recklessly uses natural resources without concern for the environment.) Most students created extensive lists detailing the impact of environmental destruction on living organisms. This activity led to a passionate discussion of moral responsibility in protecting the environment. Afterward, students wrote in their nature journals about what the school’s playground may have looked like before the school was here. Many students decided that it was probably home to many different species of plants and animals.

**Reading and writing: Focus on comprehension**

Students read a selection from a standardized state test about recycling and landfills to practice reading for comprehension using several reading strategies. For example, as a class, we read a short passage about sustainability. Next, I instructed students to turn and talk about the passage to their neighbor and then record their thoughts in their journals. Students were excited about sharing their thoughts, questions, and ideas about sustainability with the class and record their thinking.

Following the discussion on sustainability, students went outside with their journals and the writing prompt “What would you tell a fifth grader about the importance of protecting the environment?” Students’ responses were everything I could have wanted as a teacher. Several students recalled details from class projects and discussions addressing the conservation of resources and came up with practical things those fifth graders could do to help. Students went into great detail about the interactions between humans and the environment and spoke about the impact that humans can have on other living things in the environment.

**Speaking and writing: Teaching students to use their voices**

Using another Project WILD activity, Animal Poetry (2001), I asked students to close their eyes and imagine that they were a wild animal. I asked them to imagine what that animal would be doing, what the world looked like from the animal’s point of view, and with what other living things the animal would be interacting. Then I reviewed and read examples of two types
of poetry: the haiku and the cinquain. Students next journeyed to the outdoor classroom to create a haiku or cinquain about their animals. When we returned to class, students had the opportunity to write their poem on the board and recite it to the class, which they were very eager to do.

Another way that writing helped students use their voices was through reflection on the following prompt in their nature journals: “What would happen if there were no limits to how many game animals a hunter could kill?” After recording their thoughts, students took turns sharing their opinions with the class. In my classroom, we have established a culture in which all individuals and their opinions are to be respected. It is important for students to take turns speaking and not to speak over others, even if their opinions differ. Almost every student had a strong opinion about this topic. For example, some students who were hunters expressed an understanding of the impacts of overhunting on a game species and the consequential impact on other species. This prompted me to include a follow-up activity to help students to consider the problem of overpopulation in a species. Using the activity Animal Overpopulation: How Can People Help? from Science Explorer: Environmental Science (Prentice Hall 2000), students worked in groups to research three deer population control questions: (1) Should people take direct action? (2) Should people take indirect action? (3) Should people do nothing? Student groups had to identify the problem, analyze the options, and find a solution based on their reading from the textbook. In support of the Common Core Standards, student groups peer reviewed each other’s writing and rewrote their final proposals as a group. During the next class period, students held a mock town hall meeting in which they debated the proposed solutions.

Why nature journaling?

Teachers should use nature journaling in their classes because, whether they are at home or at school, students spend most of their time indoors. Although I implemented nature journaling in my life science classes because, whether they are at home or at school, students spend most of their time indoors. Although I implemented nature journaling in my life science classes, nature journaling is an easy way to connect science literacy to any classroom, regardless of the science topic taught. The Earth science teacher can have students observe lunar phases or write about erosion that takes place on the playground after a heavy rain. The physical science teacher can have students journal about the different types of matter in the environment, how they can be classified, and their changes. Science teachers are unique in that we can take our classrooms outdoors and easily enhance student learning.

The results of this action research study indicate that students’ (a) quality of journal entries and (b) knowledge about the environment increased throughout this project. For example, most student journal entries improved in quantity and quality throughout the school year. Earlier entries (see Figure 2) are lacking in observation while later entries (see Figure 3) have richer description and more insight into the interconnectedness of nature.
The Draw-an-Environment Test Rubric (DAET-R; Moseley, Desjean-Perrotta, and Utley 2010) was used to assess students’ understanding of the environment in four categories: human, living-organism, abiotic, and human-designed/built factors. Students completed this test prior to and after finishing all nature journaling activities by responding to the prompt “Draw your environment.” The rubric for the DAET-R scores students’ responses on a range from 0 to 3. A factor that was not present at all in the drawing would receive a score of 0. A score of 3 indicates that a factor was drawn showing explicit interactions with other factors and its impact on the environment. Figures 4 and 5 are examples of one student’s pre- and post-DAET-R measures, respectively.

In Figure 4, you can see that this student only focused on living things (such as birds and trees). The student showed interactions among different living things (i.e., the bird nesting in the tree) but did not show the explicit impact of those interactions on the environment. Moreover, humans and human-designed elements are not a part of this student’s environment.

In Figure 5, the student has made explicit labels that indicate the effects of the interactions among all four factors on the environment. There are negative interactions (i.e., the soda-can plastic rings around the dead duck’s bill and litter). There are also positive interactions (i.e., the person planting a tree and the person picking up litter).

At the end of the nature journaling unit, students showed an increase in their depth of understanding of the environment as shown in their post-DAET-R drawings. The increase was statistically significant in the categories of human, living-organism, and human-designed factors. However, there was very little change in the category of abiotic factors. This is not surprising because my nature journaling activities did not focus on abiotic factors. From this research project, I have learned that the abiotic factors need to be made explicit to students, and I will include this in my future lesson plans.

**Conclusion**

This action research study indicates that after journaling, students had an increased understanding of the environment. Nature journaling provided an outlet for students to go outside and focus on nature. Linking the journaling to the classroom through activities also allowed students to make better connections among science activities, writing, and the environment. In the future, we plan to start nature journaling with students from the beginning of the school year so that it immediately becomes a part of the classroom culture.

Science teachers have an obligation to help students make a connection to their natural world. This can be difficult with some schools’ prescribed curriculum that dictates what and when topics are taught. Often, topics such as plant growth are taught during months when most plants are not active. Nature journaling can provide an outlet for teachers to take their students out of the classroom and into the great outdoors throughout the year.

**References**


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