Creating Confidence and Community Through Nature Journals

BY KATIE COPPENS

Place-based education is a term coined by Laurie Lane-Zucker and John Elder in the 1990s that emphasizes students’ integration in their local community as a foundation for learning (Lane-Zucker 2019). David Sobel has authored many books on this topic including *Place-Based Education: Connecting Classrooms and Communities* (Sobel 2013), which highlights the importance of fostering children’s appreciation of the natural world, developing ties to the community, and helping them become more actively engaged citizens. Additionally, students who participate in place-based education are more likely to take an active role in environmental protection and advocacy (Akbasli 2018).

I have found nature journals to be the artifact that best documents the growth of my students, while providing them with a vehicle to show thinking, take risks, and celebrate their individuality.

**Introducing the nature journal**

At the start of the year, I show my students a drawing of a tree with roots, and I ask, “What is science rooted in?” They first talk in small
groups, then the conversation grows into a class discussion. Some examples of answers are that science is rooted in curiosity, observation, evidence, and a need to better understand the world around us. I then show my drawing (see Figure 1) for how I visualize science. We end up revisiting this tree metaphor throughout the year and re-evaluate its accuracy as our knowledge grows. As the year progresses, students bring up the need to add concepts. For example, they add the scientific method to the trunk and label the smaller branches with topics such as ecology and plate tectonics. But the tree’s primary purpose is to plant the metaphorical seed for why observation and curiosity are so important to the work we will do in class and the work of those who have made scientific discoveries. This mindset sets the tone for the introduction of the nature journal and a year of scientific inquiry.

I introduce the nature journal by taking my students outside as part of our first science unit on observation, inference, and prediction. Students practice making qualitative observations and we share various ways of recording information, ranging from lists to drawings. I then explain that each week there will be a nature journal assignment given on Monday, which is due by Friday, with a prompt that connects to what we’re working on in class. At the start of a unit, their first entry is about “Things I Wonder.” For example, Figure 2 shows the nature journal prompt at the start of our geology unit. While observing the rocks and landscape at an outdoor location of choice, students answer these prompts:
• What are some things you wonder about minerals and rocks?
• What are some things you wonder about the past environment of where you’re observing?
• Sketch any size rock or sediment. What do you wonder about it?

Student responses provide information about students’ prior knowledge and what they’re curious about. Most students write their nature journal entries in their backyard. I don’t require them to sit in the same location each week, although some educators have seen the benefits of what are called “sit spots”—locations chosen by students that they return to again and again to help them better connect to one area through close observation over time (Fravel 2021).

| FIGURE 2: Nature journal prompt at the start of a geology unit. |
| Nature Journal 5- Things I Wonder About Geology... |

Throughout this year, you will be keeping a nature journal. Each week you’ll be provided with specific assignments that build off of what we’re working on in class. Please know, this is your nature journal. You can go beyond the assignment to draw plants, animals, write a poem, write about what you’re seeing and feeling, or keep a log of how much you see change. You can do your nature journal in the same spot all year or you can change locations. Observations should be for at least 10 minutes outside.

Include on the top right of the page:

___ Date
___ Time (also include AM or PM)
___ Weather at the time of nature journal (temperature is optional)
___ Location of where you’re making your nature journal

For this week’s assignment:

___ What are some things you wonder about minerals and rocks?
___ What are some things you wonder about the past environment of where you’re observing?
___ Sketch any size rock or sediment. What do you wonder about it?

This rubric gives you the expectations:

<table>
<thead>
<tr>
<th>Completed Nature Journal - Due by Friday, Oct. 15th</th>
<th>Does Not Meet</th>
<th>Partially Meets</th>
<th>Meets</th>
<th>Extends</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUST REDO</td>
<td>Lacks questions and/or curiosities about geology.</td>
<td>There are some questions and curiosities about geology, but it lacks details that show your thinking.</td>
<td>Includes well thought out/ explained curiosities and questions about geology.</td>
<td>Includes well thought out/ explained curiosities and questions about geology with significant details/insight beyond the assignment’s criteria</td>
</tr>
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</table>
The nature journal prompts are designed to encourage inquiry and individuality, which helps create a community of scientific thinkers. The tasks all connect to class concepts and range from applying metric measurements of “cm” and “mm” to leaf rubbings, to learning the skill of close observation by pretending your eye is an ant and drawing without looking at your nature journal while your eye is following the contour of the item, to reflecting on personal experiences. There are many interdisciplinary ways to build connections between science and other subjects (see Supplemental Materials for a year of the nature journals assignments and models I use with my sixth graders). In the same assignment, some students get deep and philosophical about science, others get poetic or artistic, while some are list makers and data collectors. With each entry, I get a valuable perspective into how my students think about science and connect to the world around them.

I have also used the nature journal as a tool during our ecology unit when we go outside as a class to observe and record examples of concepts that we’re learning. Using the nature journal as a class activity allows for a shared experience and a way to come back to class and celebrate individual approaches to how students have shown their thinking. I emphasize that there are many ways to show scientific understanding and that a nature journal is a tool that revolves around freedom to creatively express knowledge. Figure 3 shows an approach to the nature journal prompt in Figure 2.

**FIGURE 3:** An approach that a student took toward the assignment in Figure 2.

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Teacher feedback and support

Because students have four nights to complete the assignment, nature journals trickle in over the week. If a student is ready for me to score theirs, they either flip to the page of the entry or mark it with a sticky note and put it on my desk. My science class begins with a bell ringer, which is when I typically score the three to six nature journals that are submitted each class period. When returning nature journals, I call students one-by-one to come to my desk for quick feedback and to compliment something about their approach; this effort only takes a few seconds, but it helps my students’ confidence and builds our teacher–student relationship. If it’s not possible to score them during class and give oral feedback when returning them, I pass them back at the start of the next class and put a sticky note with feedback or add a comment to their grade in our online grade book. See the rubric in Figure 2.
The open-ended assignments are learner-centered, which leads to differentiation by giving students the freedom to think creatively and critically. For students who need more support, I provide a list of vocabulary with definitions that connect to that week’s concepts, and the assignment’s prompts work as sentence stems. For example, in a nature journal assignment where they showed their understanding of potential and kinetic energy, I provided a list of terms and definitions that could support their thinking, such as: energy transfer, stored, motion, position, gravity, mass, and momentum.

While there are many advantages to this nature-based project, the biggest challenge involves how to support students who struggle with homework completion when an assignment revolves around doing the work outside of the classroom. Giving multiple days for the assignment is important, and when an assignment is finished, giving specific positive feedback encourages students to feel invested in the journal and the voice they bring to the assignment. Giving students choice can also help with engagement. For example, a digital option worked well when teaching students virtually and through a hybrid model. Although the majority of my students used a notebook with lined or unlined pages (or submitted photos of their pages when virtual), some students enjoyed making a vlog (video log) or using digital platforms such as Google Slides or Canva.

Creating classroom community
The nature journal creates community by providing a shared classroom experience. Each week, when introducing the prompt, I show the entry from my own nature journal to help my students understand the expectations. I purposely do varied levels of detail in my responses, and we use my entry to discuss the rubric where students pretend they’re the teacher and talk with their neighbor about how they would score it and why. Although my students tell me it’s helpful to see my model and that scoring mine helps them better understand the expectations in the rubric, a downside of showing my model is that about half my students organize their entries in a similar way to mine. This is why spotlighting students’ unique organization or approach can be helpful to the class, as well as build a community where students are celebrated for taking risks. For example, students who add latitude and longitude points for their observation location, write a poem, or tape in a sample to support their qualitative description demonstrate unique ideas that I highlight to the class. Students also feel celebrated at the end of a unit when they choose one entry

FIGURE 4: Students taking part in a gallery walk where they look at classmates’ favorite nature journal entry from a unit.
of their nature journal from that unit to put on display as classmates walk around and see one another’s work (see Figure 4). Afterward, I give time for students to approach at least two students with specific feedback about what they found inspiring or interesting about their approach.

Nature journals are a great tool for teaching students how to think about and express science in a way that’s individualized to their needs, while also connecting them to their classmates, teacher, and nature. Nature journaling also allows students to grow in their ability to observe, reflect, and document their own scientific understanding. I encourage you to use nature journals to teach students to both closely observe the world around them and as a vehicle for looking inward and appreciating their own voice.

REFERENCES

SUPPLEMENTAL MATERIALS

Katie Coppens (contactkatiecoppens@gmail.com) is a science teacher at Falmouth Middle School in Falmouth, Maine. She is the author of NSTA’s Creative Writing in Science: Activities that Inspire and various science-themed books for children including The Acadia Files chapter book series, Geology Is a Piece of Cake, and Earth Will Survive, but We May Not.