Nature Journaling with Expert John Muir Laws: Not Just for Nature-Loving Teachers!

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Top image: Fiona: Age 13, grade 7, independent nature journaling

One warm morning as my husband and I sat on our front porch, we heard an odd, loud, piercing cry. Soon a medium-sized hawk flew to the top of the house across the street. We could see that it had a robin-sized bird in its talons. We watched the gory and fascinating scene as the hawk ate the slightly smaller bird. It was hard to look

away, but I decided I had to try to get my camera to capture the moment. Of course, as soon as I went inside the hawk flew away. Despite having watched for a good minute or two, I don't think I could confidently identify either the hawk or its breakfast. What could I have done differently to better remember the details of this experience and identify both birds? What tools would have been great to have at my fingertips?

John Muir Laws, a naturalist and environmental educator (he is named after but not related to John Muir, environmental advocate and founder of the Sierra Club), would have been prepared for the hawk and its hearty breakfast. He would have had his nature satchel nearby filled with his journal and the tools he needed to remember this experience; instead of going inside for his camera he would have known what to do to "capture" the moment forever. John, also known as "Jack," has spent his career looking for the best tools to connect people to nature in order to help them fall in love with the world around them. He has dedicated his life to the art of nature journaling and to offering step-by-step guidance to help students and adults feel confident getting started.

In the following pages you will learn some of his basics of nature journaling, some techniques and tools to help you get started (or improve your experience) with students, and more about what has inspired Jack to do this work. We will also explore why this is important to do with students and you may just be inspired to do this on your own during your non-teaching time. At the end of the article we will include links to resources that you may enjoy.

> "Journaling is the single most powerful tool to supercharge your observation, memory, and connection with nature. It is the critical foundational habit of being a naturalist and scientist."
>
> —John Muir Laws

Fundamental Thinking Tool

Laws argues that the observation notebook is a "fundamental thinking tool" that helps students observe more carefully and remember more effectively. He says, "Keeping a journal of your [nature] observations, questions, and reflections will

enrich your experiences and develop gratitude, reverence, and the skills of a naturalist. The goal of nature journaling is not to create a portfolio of pretty pictures but to develop a tool to help you see, wonder, and remember your experiences." He believes that all are capable of developing these observation skills and that you do not have to be either an artist or a naturalist to do this. He continues,

> I believe that the process of attention is what makes you fall in love with the world. It is through attention that we create memories, but those memories will change over time so keeping a notebook and documenting what you're seeing is a very powerful way to help you preserve the integrity of those memories as a scientist...the notes are data, a record of what I see.

During an interview with Jack, it became very clear that this passion of his would benefit FOSS users by helping teachers better support students with their science notebooks and would also help enrich many of the outdoor experiences built into our program. As you read this article, consider how these observation skills could be used both outdoors to help you dig a little deeper into the schoolyard activities in your Investigation Guides as well as with using science notebooks with students as they do scientific drawings with the classroom living organisms.

Fiona: Age 13, grade 7, independent nature journaling

What Is Nature Journaling?

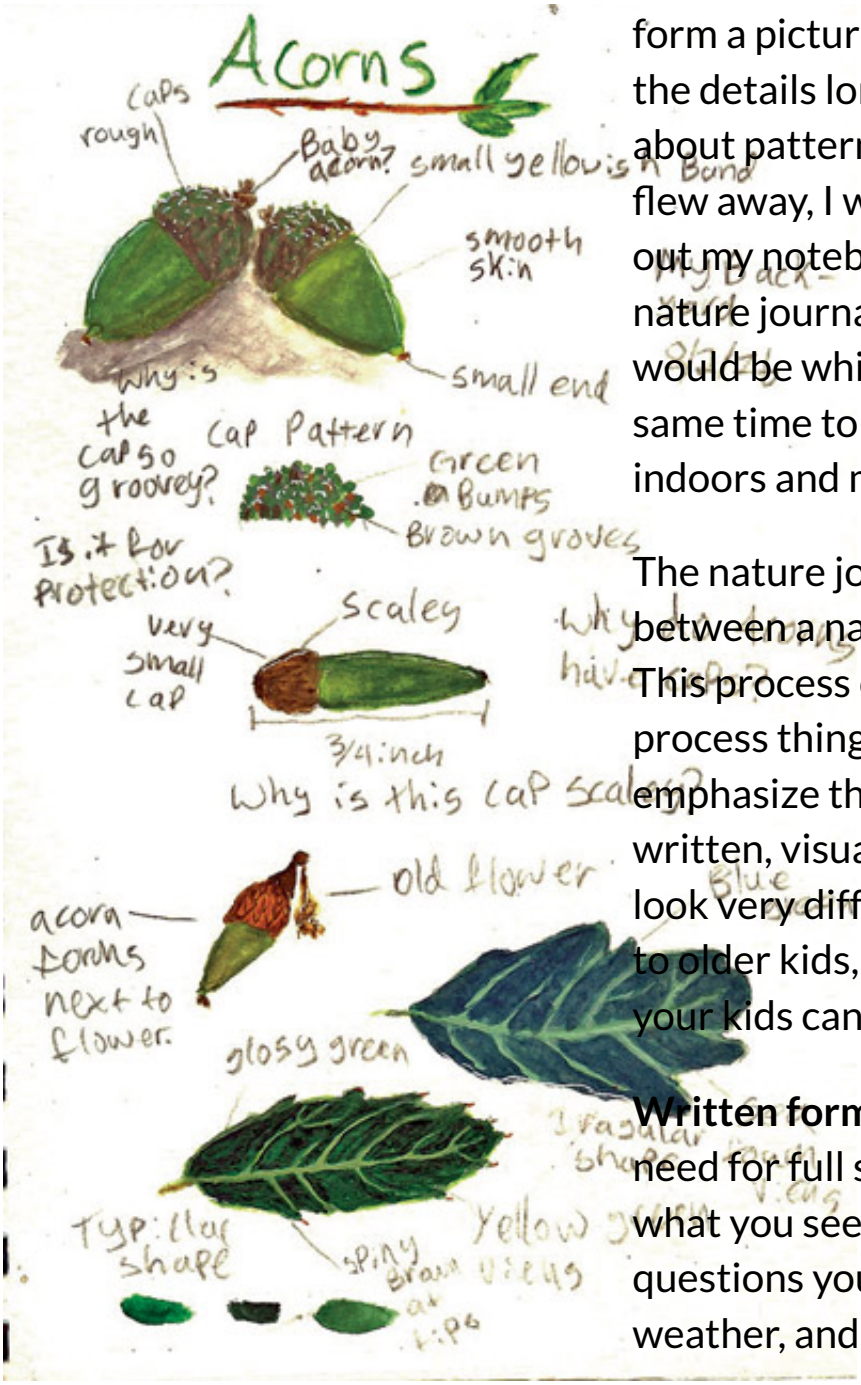
Observation notebooks, nature journals, science notebooks–Jack calls them nature journals, you can call them whatever you want–are all about getting students outside regularly to record what they see, to look very carefully at unique and mundane things they find and discover outside the classroom, and to slow down and connect with the natural world. Observations lead to deeper understanding and more lasting connections. Jack believes the step-by-step strategies used to enhance observations are tools that provide a road map to make stronger, longer-lasting memories, but also can help people connect more deeply with nature. Jack says, "Looking hard isn't enough. Observation isn't something in the eyes, it engages your brain in a dynamic way to remember what you observe–intentionally engage your curiosity. Curiosity is a skill you can enhance and develop if you're deliberate about it."

Getting Started

It's probably best to start observing things that will not fly, hop, or run away. Start with acorns, seeds, leaves, or flowers. When you do want to capture an animal, they tend not to stay still for you or your students, so Jack recommends speaking out loud about what you see. As an example, the following is what I could have said about my hawk. (I will write an X when I cannot remember specific details),

> The hawk is about 28 cm high, brown with only a few white feathers on the back, the white feathers look like stripes, its beak is X color, with a sharp point, the beak is about the size of X, the eyes are X color and located on the X of its head. Its tail feathers are X long. Its head swivels to the left and right about 180 degrees. It is resting on the peak of Sean and Carol's house with a small bird in its talons. What is it using to balance itself if the bird is in its talons? I wonder how long it will take to eat the bird? What parts of the bird will it eat? Will it use the feathers for something else?

Saying these things out loud is a "powerful brain trick" and would have helped me



More work by Fiona, age 13; independent nature journaling

form a picture in my head and in turn remember the details longer. Jack recommends thinking about patterns, shapes, sizes, etc. When the bird flew away, I would better remember as I pulled out my notebook from my satchel to start my nature journal. With a class of students, everyone would be whispering their observations at the same time to themselves. This can be practiced indoors and may seem silly at first, but it works.

The nature journal entry will be a conversation between a natural phenomenon and your brain. This process creates a time to slow down and process things. Jack recommends that teachers emphasize three languages in nature journaling: written, visual, and math. Of course, these would look very different with younger kids compared to older kids, but you will be the judge of what your kids can handle.

Written form: Record short thoughts, ideas (no need for full sentences or correct spelling). Write what you see, hear, feel, wonder about, and any questions you have. Also, include the location, weather, and time of day.

Visual: Include drawings, diagrams, maps and sketches (color is not necessary, but useful). For drawings, start with the general shape and proportions of what you see and add details from there.

Math: Use the language of numbers. Count, estimate (especially when the numbers are too difficult to count), measure, and note the temperature. Record the time and date.

Expert Teaching Tips and Tools

Jack believes that the tools you include will influence how students observe and will affect the things students see. Students need easy access to simple tools when they're on a nature walk, in the schoolyard, or on a field trip to a natural place. First, you don't want to have to go inside to get something you forget (because the hawk will fly away!), and you also don't want everything in a backpack, or in the teacher's bag, because it takes too long to take it off or dig it out. Students need immediate access to their tools. Cloth shoulder satchels are ideal (Jack's website, listed in Resources below, has some inexpensive recommendations), but if you're like most teachers and don't have a budget for something like this, consider making satchels for students using zip bags as FOSS describes in the *Taking FOSS Outdoors* chapter. Students would benefit from a small ruler, a magnifying lens, pencils, and of course, a notebook. The tools you have will change the way you observe–the tools you have affect the things you see. He cautions that the first time you introduce a new tool or a new procedure, it will be a novelty for students and may be a distraction. Students will want to investigate that new tool and overuse it. This may take time until students begin to use the tool without being distracted by it, but the only way to not have it be a novelty is to use, or do, it regularly. Anticipating that this will be an issue for students will best prepare the teacher to expect certain behaviors.

The first time you do some nature journaling with students, the experience itself will be a novelty and a distraction. Likewise, taking students outside for an outdoor activity for the first time will also be a novel experience. In the *Taking FOSS Outdoors* chapter in *FOSS Teacher Resources* (also available for download on FOSSweb), we highlight many teaching strategies to improve the outdoor experience. We suggest a "sacrificial first lesson" knowing that students may break the rules in the outdoor space the first time. Jack thinks of this like the first "sacrificial pancakes" he makes for his kids. Daddy gets to eat those first few that don't come out well. You cannot get into positive nature journaling experiences without those first less-than-perfect outings. Students will want to do it again and again and will quickly learn the behavior expectations and how to use the tools.

Why Should People Nature Journal?

According to Jack,

> People should do this because the world is infinitely fascinating and beautiful. You see so much more when observing through the journal. The ability to hold things in our head is really limited. Journaling gets us past the limits of our brain's capacity of how much information it can store and hold and manipulate at one time. The journal frees up our brain, once you've got all of this down on paper, your brain is freed up to operate at more sophisticated levels.

Nature journaling can also be a great way to reach out to children. As Jack explains, "I was shut down academically and had come to believe, because I'm dyslexic and had trouble spelling and writing sequences of numbers, that I was stupid." But a high school biology teacher saw past this by engaging Jack, believing in him, and introducing him "to the joy and fun of scientific exploration."

The FOSS staff work with educators from across the country and we know that many of you are meeting the young "Jacks" of the world and believing in them. You help them see the wonders of classroom science, the schoolyard, and the greater world around them. We believe that finding time to use nature journals with your students will make them more productive thinkers, better observers, and more peaceful nature-loving young people.

Jack and Fiona met serendipitously in 2016 on Fiona's 13th birthday (after she had received all of his books as a gift) and they became fast friends. Jack taught Fiona some basics of nature journaling, and now Fiona regularly does this on her own time.

Jack is an advisor to the BEETLES™ (BetterEnvironmental Education Teaching, Learning and Expertise Sharing) program of the Lawrence Hall of Science where the FOSS Project is developed. Jack partnered with

BEETLES to help create some of these teacher friendly videos and supports.

Be sure to visit and explore Jack's personal site as well.

Chatting with a Young Nature Journaling Newcomer

Did you notice the nature journal pages in the article about John Muir Laws? These are from a journal by 13-year-old Fiona, a seventh-grader at Live Oak Waldorf School in Applegate, California. She has been doing this for only five months. We asked Fiona to tell us one magical experience she had in nature with a journal. Here is her reply.

In August, I was back in Sierra Valley with my new best friend and nature journaling buddy, John Muir Laws, also known as Jack. We worked in our journals and sketched the birds we saw, including American bittern, sandhill crane, and great egret. As we walked up to the steel bridge, it was dusk, and my mom called out "Barn owl! Barn owl!" and Jack and I saw it flying along

the edge of the bridge. We were mesmerized. Then Jack said, "I just saw that barn owl fly under the end of the steel bridge." We gave each other one look, and, since we are crazy nature people, we went running to the end of the bridge where he saw it go. Jack climbed down over the edge of the bridge and peered in under the large rock piles around the base of the bridge. It was almost dark by then, so Jack pointed a flashlight into a crevice in the rock pile. He looked up at me, and whispered excitedly "FIONA! You NEED to come down here RIGHT NOW!" So my mom and I climbed down and peeked in, and there, not two feet back in the hole, looking right at us, sat the spectacular barn owl. Of course, we both went straight to our journals to draw and write about it. This evening was a truly miraculous occurrence that I will never forget.