

Nature Journaling Binder

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Keeping a nature journal. There are several different styles of ‘nature journaling’ that you can experiment with to find one that works for you. It is also a very good tool for environmental education because it leads people (children and adults) to make observations and record them—and if used consistently, can provide a record of how the individual has changed over a period of time.

In this binder, I have put together a collection of journaling styles and activities intended for use by someone who wants to improve on or gain some additional naturalist skills. It focuses on journaling activities for use by an adult individual, but all of the techniques may be used during a program or with a group of children (with some small adjustments depending on the activity).

The beginning holds some articles and thoughts from others on how nature journaling often includes sketching or drawing, with the goal to record observations—not to make “pretty art.” It is based on how to introduce nature journaling to children, but the same information holds true for introducing it to adults. The binder then transitions into different journaling activities that may be used. Many of these activities are collected from the Prairie Wetlands Learning Center and the Prairie Science Class in Fergus Falls, Minnesota. The USFWS rangers and the PSC teachers there use a journal and encourage students to use a journal; in the Prairie Science Class, they write in their journals every school-day. Most of the example pages are copied from either my PWLC journal or from my Stony Brook-Millstone Watershed Association journal.

Use a journal setup that you are comfortable with, whether it is a notebook, a moleskine journal, paper in a three ring binder, or something else. Also, use whatever writing utensil you like, though ink will last longer and be clearer in the future than pencil. (Be aware that ballpoint pens have difficulty working when they are too cold.) In addition, try to always include complete information at least once—the date, full names (first and last), and place information like the organization, the city, and the state. In the future you may not remember all of this information, and anyone else looking at the journal is unlikely to know it.

I hope that this binder provides you with ideas, tips, and skills for use as a naturalist in the future. I am certainly no expert, as I am still working on making journaling a habit, so if you have ideas, comments, or suggestions, I hope that you add them for the use of others!

-Elizabeth Thompson

2014 Teacher-Naturalist Intern

Nature Journaling Binder author

The Nature Journal as a Tool for Learning

by Karen Matsumoto

"To see a wren in a bush, call it "wren," and go on walking is to have (self-importantly) seen nothing. To see a bird and stop, watch, feel, forget yourself for a moment, be in the bushy shadows, maybe then feel "wren"-- that is to have joined in a larger moment with the world." -

- Gary Snyder, *Language Goes Two Ways*, 1995.

Recent research has shown that American children are woefully ignorant of world geography and other areas of basic knowledge. This lack often extends to local geography as well. Although we look out on a familiar, nearly memorized landscape that we call home many of us would not be able to describe-- much less name-- the street trees in front of our own houses or apartments. It is difficult for a person to care deeply about anything that he or she hasn't experienced or doesn't know much about. It is unrealistic to expect our children to care about their neighborhoods, much less the earth, if we haven't taught them to see it and to feel what it means to them. Recording observations and feelings in a field journal can be a powerful way for students to get to know their natural community and the geography of their home environment, so that they can develop that sense of caring commitment.

There is a growing interest in keeping journals for science and data collection, which can be useful to students for recording experiments and scientific observations. A nature or "field" journal can be much more than a record of scientific facts, however. It can include an on-going record of observations from a specific location or over the seasons, and a reminder of where and when to look for particular wildflowers or birds. It can also be a way to save your memories and feelings about nature experiences to keep them fresh in your mind and enable you to share them with others in the future. A nature journal that includes drawings and narrative, as well as a record of a student's thoughts and feelings, can help to tie together science and art, and provide opportunities for creativity and reflection.

The use of nature journals is not new. Lewis and Clark and, later, naturalist Thomas Nuttall used them extensively during their explorations of the northwest. The nature journals of Ernest Thompson Seton, John Muir, and Beatrix Potter are examples of the tradition of using narrative and art in combination to communicate keen and careful observations.

Field journals make nature the subject, and use observation, reflection, drawing, and writing as the process for learning. As your students observe and record nature through drawing and writing, they can get to know an area intimately and personally. They will use both intellectual and sensory "ways of knowing" that can be both more immediate and deeper than "left-brain" data collection skills alone.

In my experience working with children, I have found that the act of drawing and writing helps students to see and know nature through attention to and expression of their feelings. Feelings are a part of learning; it is now known that feelings are essential to deep understanding and sound decision making. Because attitudinal, emotional, and aesthetic considerations are important for growth and development, journals can be a good vehicle for "starting where children are." Rachel Carson, naturalist and writer, suggested that feelings help start the process of children wanting to know (1956). "Once the emotions have been aroused - a sense of the beautiful, the excitement of the new and unknown, a feeling of sympathy, pity, admiration, or love - then we wish for knowledge about the object of our emotional response. Once found it has lasting meaning."

My own first experiences with nature journals were a little daunting, since I felt intimidated by my limited skill in drawing and humiliating memories of past experiences in grade school. This may be true for many students,

but we don't expect students to be able to write or to master mathematics without instruction, practice, and time. Anyone can learn to draw, make accurate and insightful observations, and record their feelings about the world given basic instruction and time to practice. It is important to help students understand that no one starts out as an expert. Moreover, nature journaling is primarily intended to support the development of observation skills, not artistic creation. The drawings serve the purpose of encouraging close attention and providing visual evidence of what the student has observed and learned, and create a running visual record of their experiences. It is important to let students know that their drawings can be significant and informative even if they "don't look good".

There are several kinds of journals that I have found useful:

- Grinnell-type journals are popular among biologists worldwide. They have two parts: they generally include daily accounts of observations at a location, combined with a running record of individual species of plants or animals.
- A phenology journal is an account of seasonal changes that affect plants and animals in a given location, and the biological effects of those changes. This can be an on-going journal, or it can be as simple as recording events on a calendar.
- A journal of a special location is intended to create a comprehensive account of the natural history of a limited area such as a park or schoolyard, and might include observations of weather, plants, animals, species interactions, and human-caused changes.
- A chronological journal of a trip or camp experience can include many types of observations and feelings, and will provide a personal account of an experience from the point of view of a single observer.

Getting started is not difficult since journaling can be done with very simple and inexpensive materials and equipment. Begin by supplying students with plain paper, #2 pencils, felt-tipped markers, a clipboard, and field guides. Encourage students to practice copying from field guide illustrations to help them learn about local flora and fauna, as well as to practice drawing.

Students should be encouraged to record a standard set of information when out in the field to document their experiences accurately. This will enable your students to compare written notes from year to year to see if there have been any changes, and can provide an accurate record of when and where the best wildlife sightings have occurred. Since many plants and animals that are observed today may become rare within a lifetime, students may cherish these recorded observations from their past. The nature journal will provide a clear record of thoughts and feelings about an area that memory alone could not. If you can't get outside, journaling skills can be practiced in the classroom. I have seen journal entries made from observations out of classroom windows! Another alternative is to bring the outside "inside" with objects from nature, such as animal skulls, pine cones, leaves, or shells.

The basic information that should be recorded for any observation includes:

- the date
- the location
- the time
- weather conditions
- vegetation characteristics
- human impacts and disturbance.

Students should be supported in learning to know and express what they feel, and should come to see that there is no "right way" to respond to nature.

Learning to be accurate and specific in our habits of observation and recording is not arbitrary. Robert Michael Pyle, naturalist and writer, frames the problem with some approaches to environmental education like this: "Instead of the names and traits of different species, EE tends to concentrate on the 'big picture' of ecological roles, functions, habitats, relationships, and patterns. Laudable goals, except it is like watching a play with no cast list! And is therefore liable to seem meaningless. What we know, we may choose to care for. What we fail to recognize, we certainly won't (2001)." Nature journaling helps students see that the world is not meaningless and that their own observations and feelings are important.

Nature journaling is a proven way to help children become aware of the environment around them and to develop their sense of connection with it.

About the Author (as of May 2003)

During her 25 years in environmental education, Karen Matsumoto, M.Ed. has worked as a naturalist for the National Park Service, an elementary and middle school teacher and university instructor, a natural resource consultant, and a Master Gardener Program coordinator. She is currently Science Coordinator at IslandWood.

She loves to write, draw, and field sketch with children and teachers and has taught nature journaling and science workshops for 10 years. Education: B.S. in Conservation of Natural Resources, University of California, Berkeley; Teaching Credential, University of California, Los Angeles; M.Ed. in Instructional Design / Technology, Utah State University; Certificate in Scientific Illustration, University of Washington.

To follow Ms. Matsumoto’s article about nature journaling as a learning tool, here is more information about how to use drawings without it being about the skill of making art, but about the observations and the recording of those observations.

Selected sections from the California Native Plant Society’s Nature Journaling curriculum (citation included in “Additional Resources;” *italic emphasis added*):

For kids to fully buy in to nature journaling – and for journaling to work its observational magic—they must understand that *the goal of such drawing is not to make pretty pictures, but to accurately observe and record data*. If the goal is to make pretty drawings, the pressure for pretty can get in the way of documenting observations. One becomes hesitant to start a sketch as the words of an inner art critic or memories of disparaging comments from a previous teacher ring in one’s memory. Children (and many adults) will remember the thoughtless words of a teacher who dismissed their drawings with an offhand comment. For people who have been so discouraged, starting to draw again is intimidating. On the other hand, if the goal is to clearly and accurately observe and record observations without regard to whether it “looks good” the pressure of producing ART is lifted, and the student’s focus shifts to making and recording observations. Any drawing, however crudely executed, is a success if it enables the student to see more clearly or document his or her observations. In this way, *students who do not consider themselves artists are liberated to draw without the pressure to produce a “masterpiece.”* An interesting side effect of approaching science drawing in this way is that it frees students to draw. As a result, students do draw and their work improves with practice.

Give positive reinforcement when you find accurately observed details in their work. “I see you have shown hairs on the stem. Details like that become important to botanists when identifying and studying plants.” *Give positive reinforcement to scientifically useful information that students add to their observations* such as date, location, time and weather information, size or scale information, color notes, multiple views of the same subject, or behavior or interactions with other species.

Don’t say:

“That is really pretty.” “What a good drawing.” “You are a great artist.” “That looks so realistic.” “You are really good at shading.”

DO SAY:

“The way you use both writing and drawing to describe this flower is really clear.” “I see you measured the distance between the branches and added a scale.” “Oh, you found a spider on top of the flower! Great observation.” “The insect damage on that leaf you have illustrated really helps me pick out which flower you were looking at.”

The Basics

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- Title Bar 12
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 - Cloud Identification Chart 16
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Introduction to “The Basics”

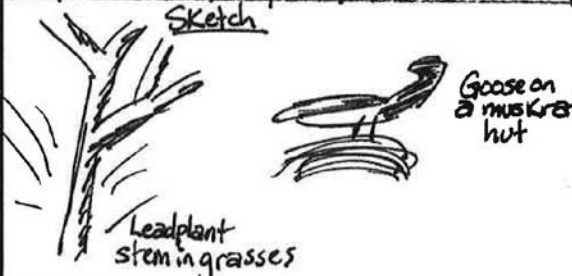
Every journal page gains value when it includes the ‘basics’ that are covered in the next few pages. Recording the date, location, and some weather information will provide more context when looking back. If you track what animals you see (such as birds or insects), knowing what time of year it is, where you are, and what the weather is like (is it unseasonably warm or cold? Is it the usual mild temperature of spring? Is it raining?) will help you to have a better idea of why you saw what you listed—or why you didn’t see something you expected to. More information about this can be found in the “Journal As a Reference” section in the back of the binder.

The amount of ‘basic’ information that you record on each page can vary depending on the equipment that you have available and what you are using the journal for. The title bar and weather bar pages go into more detail about information you can include, but your format may also vary from page to page or from journal to journal. In some instances, you may want a more formal appearance—if a program or a school group is doing some journaling, this may help to get all of the information you want. If it is just a personal recording, a less formal appearance can be used. On the next page are examples of two degrees of formality, including differing levels of information.

The example pages throughout the rest of the binder do not include title or weather bars, in order to keep the focus on the activity itself. However, the original pages in the journals that the examples were drawn from include much of this information.

Full Example Pages

This first journal example uses the 'formal' title bar and weather bar described in the following pages, and is fairly exact in the measurements—a thermometer and anemometer (wind speed) were used. This page was done with a school group to look at what was around us, make some new discoveries in nature, and think about how we can make a difference for nature every day of the year.

4/23/13 (T)		Earth Day, 24/7, 365/1		Leader - Ms. Beth	
Temp 40°F	SKY 15% blue 15% cumulus 10% stratus	Wind 7mph NW	Time 2:00 pm	PWL, N. Hill loc. Prairie	
<p><u>Sketch</u></p>  <p>Leadplant stem in grasses</p> <p>Goose on a muskrat hut</p>		<p><u>Make a difference</u></p> <ul style="list-style-type: none"> • Spreading out off trail decreases the impact (trails not packed down) • Picking up our feet instead of scuffing them - quieter, more respectful, less disturbance • Fluffing our spot - decreases the disturbing, restores hiding spots 			
<p><u>Critters</u></p> <ol style="list-style-type: none"> 1. Canada Goose 2. Mallard Duck 3. American Crow 4. Pocket Gopher Mounds 5. 13-lined ground squirrel 6. Killdeer 7. Muskrat huts 8. Greater Yellowlegs 9. Lesser Yellowlegs 		<p>→ female Kestrel</p> <ol style="list-style-type: none"> 10. Small b.o.p. (Kestrel?) brown + white stripe tail, light under 11. Robin 12. Black + white ducks (buffleheads?) ✓ 13. Coot 14. Northern Harrier 15. Red-tailed hawk 16. Hooded Merganser 		<p><u>New Discoveries - Reflect</u></p> <ul style="list-style-type: none"> • Gopher mounds are warmer to the touch than the grasses. • Shorebirds (yellowlegs) can be found around wetlands even when they are not dry in the spring. • 13-lined ground squirrels are out of hibernation now! 	

This second journal example is a much more 'relaxed' style, but still provides important information—the date, the time (AM, so morning, not afternoon), the location (SBMWA Reserve), and gives an estimate (no equipment was used) of the weather conditions. This page was from a naturalist-led walk where we were taking the time to see what was around us on one of the SBMWA trails.

5/28/14 (W) AM - Cooler than yesterday - currently low 60s, cloudy, breeze a bit		SBMWA Reserve	
Wild Side Walk			
<u>Birds</u>			
A. Robin - 1		• Ox-Eye Daisy	
Mourning Dove - 1		• Daisy Fleabane	
G. Catbird - 11			
H. Crow - 1			
Indigo bunting - 1	(*ching ching ching ching ching ching*)		
House wren - 1			
Tree Swallow - 11			
Prairie warbler - 11			
Blue Jay - 1			
E. Bluebird - 11			
Phoebe - 1	← on nest under barn eaves		

Title Bar

Used for recording.

Date:		Title		Leader:	
2/26/13 Ⓟ		Natural Inventions		Ms. Beth	
Title					
Date	Leader	Temp	SKY	Wind	Location

A title bar is a useful addition to every journal page. As discussed in the introduction to the basics, it can provide some important information for looking back through the journal. Shown above are two different styles. The top is solely a title bar; the bottom is a mixed title bar and weather bar.

The information that should be included in a title bar is:

- A **title** – the topic of the page. This may be a very basic name, or you may jazz it up, but you want to have an idea of what is included in the page just by looking at the title.
- The **date** – the date is a very important thing to include, and writing it down every time you turn to a new page should become a habit. This lets you know when you did each activity. Next to the date in the example above I also have the day of the week (Tuesday, the circled T).
- The **leader** – This is needed more for if you are using journaling with a program or a group and split the group up into smaller ones. That way, when looking back, you know which group each person was in.

Weather Bar

Used for math, observation, recording, science.

° Air Temp	% Sky	mph Wind		: Time	Location
			↑ This "extra" box may be soil temp, watertemp, windchill, or other noteworthy measurement.*	*If no title bar, include the date with the weather bar.	
	68° F Temp	overcast Sky	1 mph E Wind	11 : 53 AM Time	SBMWA Reserve Main Office Location
↑ This "extra" box may be an additional measurement or a title box (for a combined weather / title bar).					

A weather bar is very useful to have on every journal page. As mentioned in the introduction to the basics, the weather data you record provides context for the observations made or data collected on the rest of the page. The weather bar should be paired with the title bar from the previous page. If you do not include a title bar, you should at least include the date.

Weather data that can be included in the weather bar is:

- **Air Temperature** - can be accurately provided with a thermometer, or may be estimated if no thermometer is available. If you want to include this but have no equipment, at least include if the weather is hot, cold, or in between.
- **Sky conditions** - involves mostly looking at the clouds. For younger naturalists this may mean 'sunny' or 'cloudy,' but older naturalists may want to include more information such as percentage of cloud cover and type of cloud.
- **Wind speed** - may be measured with an anemometer (a wind meter) or estimated with the Beaufort Wind Scale. **Wind direction** - may be determined with a compass, or estimated if no compass is available.
- **Location** - should be included because the data or observations made are dependent on location. The overall place name should be written (such as "SBMWA Reserve") if you include location data, or you may be more specific as to where you are.
- **Time** - the time that the weather data was taken down is extremely important. Conditions are constantly changing, so it is important to know when the information was noted.

Weather Page

Used for math, observation, recording, science.

Date	Temp	Record High (yr)	Wind (Dir.)	Sunrise	Length of Day	Moonrise	Moonphase
Sky Cond.	Feels Like	Low (yr)	Humidity%	Sunset	hours minutes	Moonset	Moon % illuminated
9/13/14	67.9°F	93°F (1952)	1 mph (S)	6:37 AM	12 h 33 m	10:13 PM	Waning Gibbous
Overcast	67.9°F	39°F (1985)	72%	7:11 PM		11:43 AM	74%

A weather page is a repeating journal page. You may lay out the grid once a week and then return to fill it in every day. (This may be only every work day or school day, or every day of the week, it is up to you.) It is intended for use at approximately the same time each day, and is based on a weather station or a weather website. (The example above used www.wunderground.com.)

All of this information may be used for a variety of purposes—such as graphing, math, science, or more. For example, graphing the daily air temperature can show the location’s trends over time.

Some information that you may want to include in a weather page is:

- **Date** -What day is this information from?
- **Sky conditions** - Is it overcast? Sunny? Raining? Fog?
- **Temperature and Feels Like** - What is the current air temperature? Is there a “Feels Like” that is different? (This may also cover Windchill.)
- **Record Temperature** - High (year) and Low (year). What is the record high temperature for this day and what year was it in? What is the record low temperature for this day and what year was it in?
- **Wind and Direction** - What is the current wind speed? Which direction is it blowing from?
- **Humidity** - What is the percent humidity?
- **Sunrise and Sunset** - What time is sunrise and what time is sunset?
- **Length of Day** - What is the length of day, in hours and minutes?
- **Moonrise and Moonset** - What time does the moon rise and set?
- **Moon phase and moon percentage** - What phase is the moon at? What percentage of the moon’s face is visible?

Beaufort Wind Scale (Estimated wind speeds)

Beaufort number	Wind speed			Mean wind speed (kt / km/h / mph)	Description	Land conditions
	kt	km/h	Mph			
0	0	0	0	0 / 0 / 0	Calm	Calm. Smoke rises vertically.
1	1-3	1-6	1-3	2 / 4 / 2	Light air	Wind motion visible in smoke.
2	4-6	7-11	4-7	5 / 9 / 6	Light breeze	Wind felt on exposed skin. Leaves rustle.
3	7-10	12-19	8-12	9 / 17 / 11	Gentle breeze	Leaves and smaller twigs in constant motion.
4	11-15	20-29	13-18	13 / 24 / 15	Moderate breeze	Dust and loose paper is raised. Small branches begin to move.
5	16-21	30-39	19-24	19 / 35 / 22	Fresh breeze	Smaller trees sway.
6	22-27	40-50	25-31	24 / 44 / 27	Strong breeze	Large branches in motion. Whistling heard in overhead wires. Umbrella use becomes difficult.
7	28-33	51-62	32-38	30 / 56 / 35	Near gale	Whole trees in motion. Effort needed to walk against the wind.
8	34-40	63-75	39-46	37 / 68 / 42	Gale	Twigs broken from trees. Cars veer on road.
9	41-47	76-87	47-54	44 / 81 / 50	Severe gale	Light structure damage.
10	48-55	88-102	55-63	52 / 96 / 60	Storm	Trees uprooted. Considerable structural damage.
11	56-63	103-119	64-73	60 / 112 / 70	Violent storm	Widespread structural damage.
12	64-80	120	74-95	73 / 148 / 90	Hurricane	Considerable and widespread damage to structures.



Cloud Viewer

1. Cirrus



2. Cirrocumulus



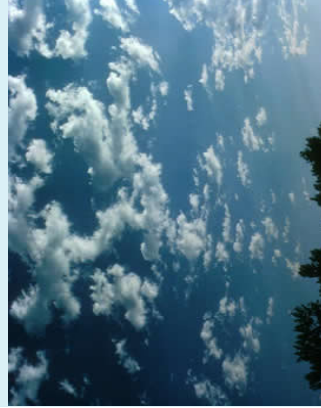
3. Cirrostratus



High Level Clouds (1, 2, 3) are white and thin-looking. At sunrise or sunset, they can be very colorful. They are most often made of ice crystals.



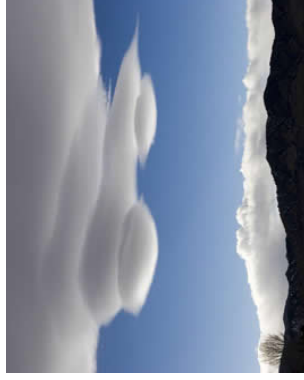
4. Altocumulus



Mid Level Clouds (4, 5, 6) are made mostly of water droplets. When temperatures are very low, the water droplets can turn to ice crystals.

How are clouds classified?

Scientists classify clouds by their height (low, medium, or high), and by whether they are flat (stratus), puffy (cumulus), rain-filled (nimbus), or a combination of these characteristics.



Saucer-shaped lenticular clouds are common in mountainous regions of the world.

How do I make the NCAR Cloud Viewer?

Cut along the dashed line in the center of the page. Look through the opening in the Viewer at the sky above you. What types of clouds do you see today? Use the CLOUD VIEWER to help you classify the clouds outside. Use the SKY VIEWER to find the sky's colors. Why isn't the sky just one color? Why does it vary?

5. Altostratus



6. Nimbostratus



7. Cumulus



8. Stratocumulus



Low Level Clouds

(7, 8, 9, 10) are made of water droplets.

Cumulonimbus clouds (9) can rise rapidly causing water droplets to turn to ice.

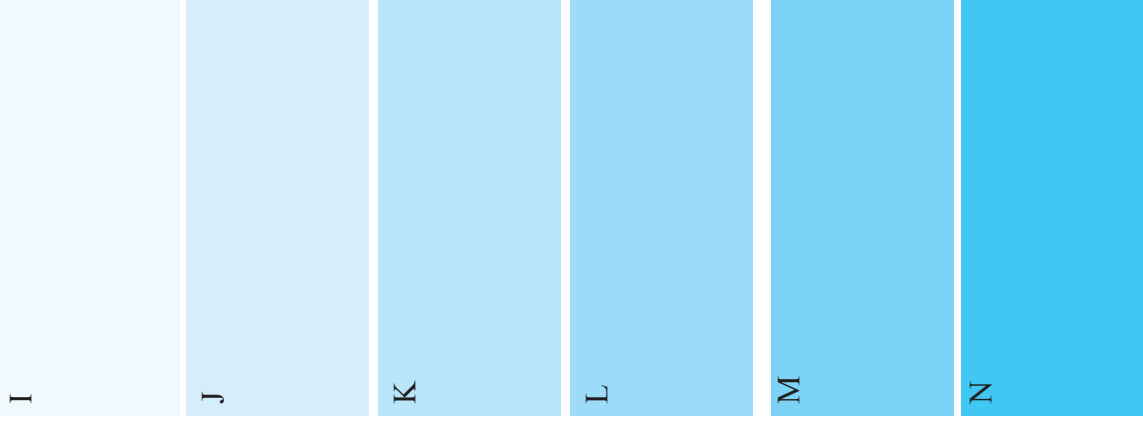
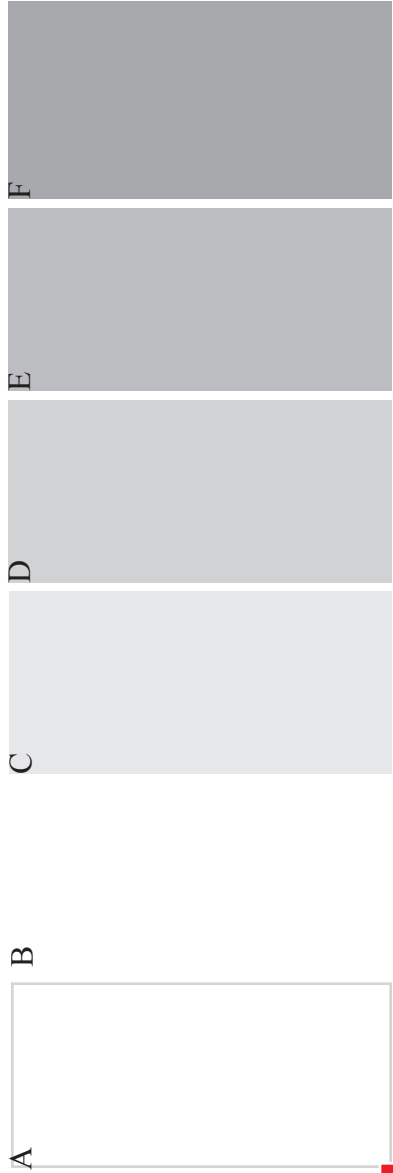
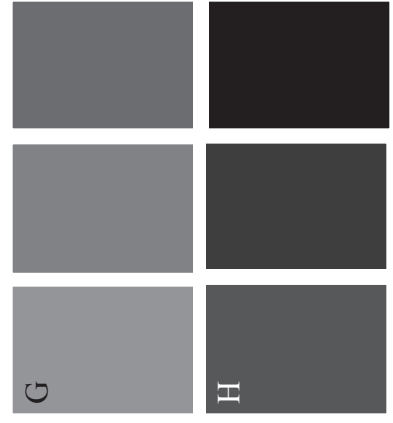


9. Cumulonimbus



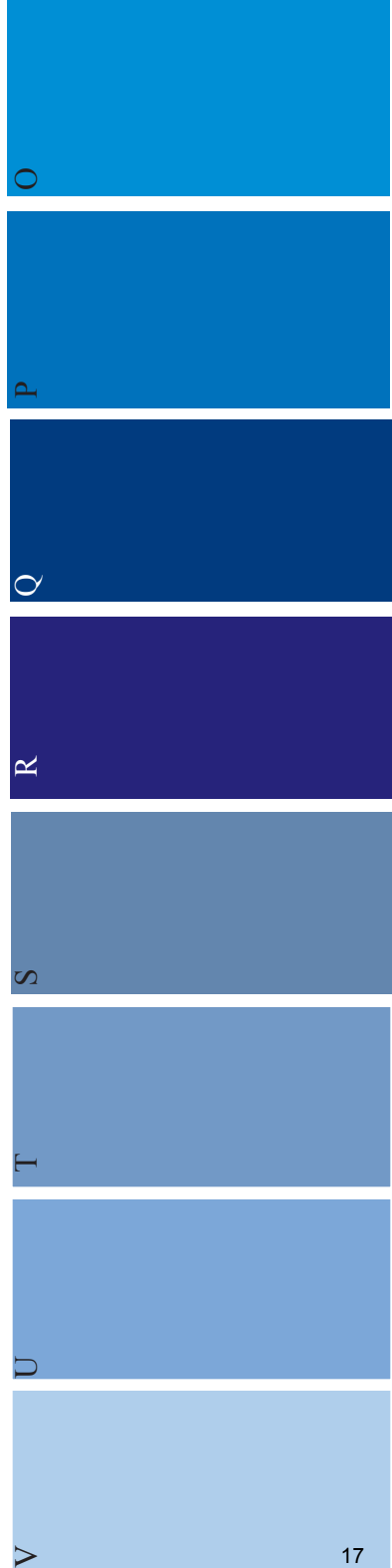
10. Stratus





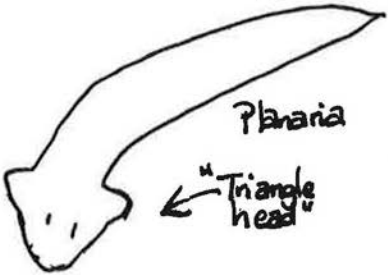
Learn more about clouds and our atmosphere at these Web sites:

- **NCAR News Center - More About Clouds on the Web**
www.ucar.edu/news/events/moreclouds.shtml
- **Windows to the Universe - Clouds; Clouds in Art**
www.windows.ucar.edu
www.windows.ucar.edu/tour/link=/art_and_music/cloud_art/cloud_art_main.html
- **Web Weather for Kids - Clouds**
<http://eo.ucar.edu/webweather/cloudhome.html>
- **UCAR Digital Image Library**
www.fn.ucar.edu/ucardil/
- **Kids' Crossing - Colors in the Sky**
<http://eo.ucar.edu/kids/sky/colors1.htm>



Generic Journal Page

Used for critical thinking, observation, recording.

<p><u>Diet</u></p> <p>Planaria- some sort of predator? Maybe scavenger or decomposer? Moves slow so stationary or small food easiest to catch, if appears.</p>	<p><u>Movement/Behavior</u></p> <p>Planaria - Similar to leech, scrunches up at times, moves all stretched out other times.</p>
<p><u>Sketching</u></p> 	<p><u>What and Count</u></p> <p>Caddis flies - IIII IIII IIII II Riffle beetles - IIII Water Pennies - IIII Crane flies - I Planaria - IIII IIII Midge flies - I Orb snail - I</p>

The 'generic journal page' is a format that can be adjusted to whatever you are studying or observing at the time. The sections may be titled whatever you want, and may be a variety of recording methods (suggestions listed below). The sections are not limited to four, as shown above. You may increase or decrease the number of sections as desired and simply fit them onto the journal page.

The above example is for a pond invertebrate study. It includes a sketching section, a list of what was found and how many of each were identified, how one or many invertebrates act and move, and an educated guess on what one or more may eat based on observation and prior knowledge.

Possible recording methods for journal page sections:

- Sketching/drawing/coloring
- Counting/using numbers
- Writing
- Mapping
- Taping something into the journal

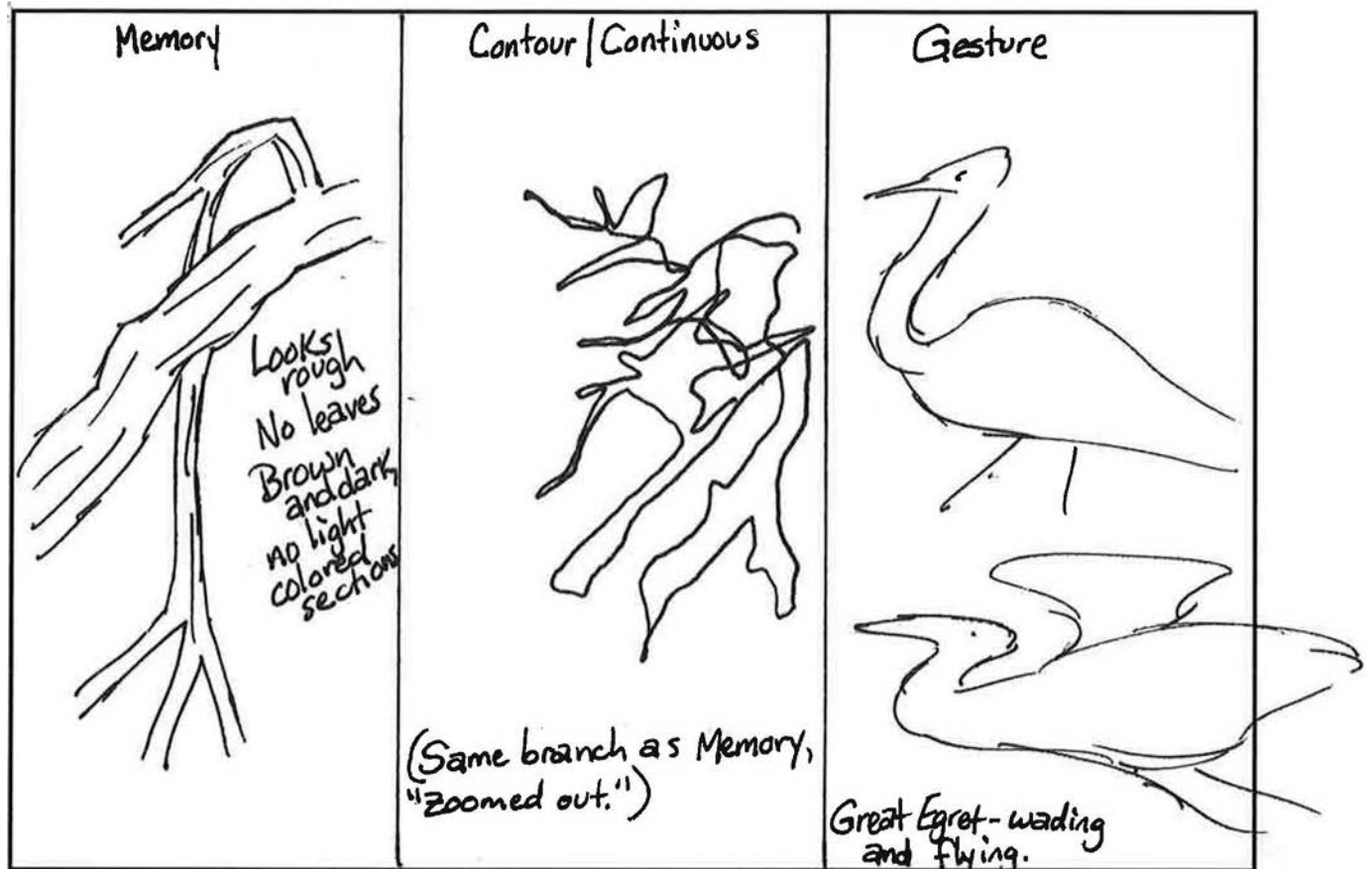
When using this style with a group of children, they can assist in deciding what each section should be focused on. This way, they are helping to make the lesson and engaging themselves in the process of how to study something.

Sketching

- Sketching 20
- Catches Your Eye 21
- Through A Window 22
- Track Sketching 23

Sketching

Used for details, observation, recording, sketching.

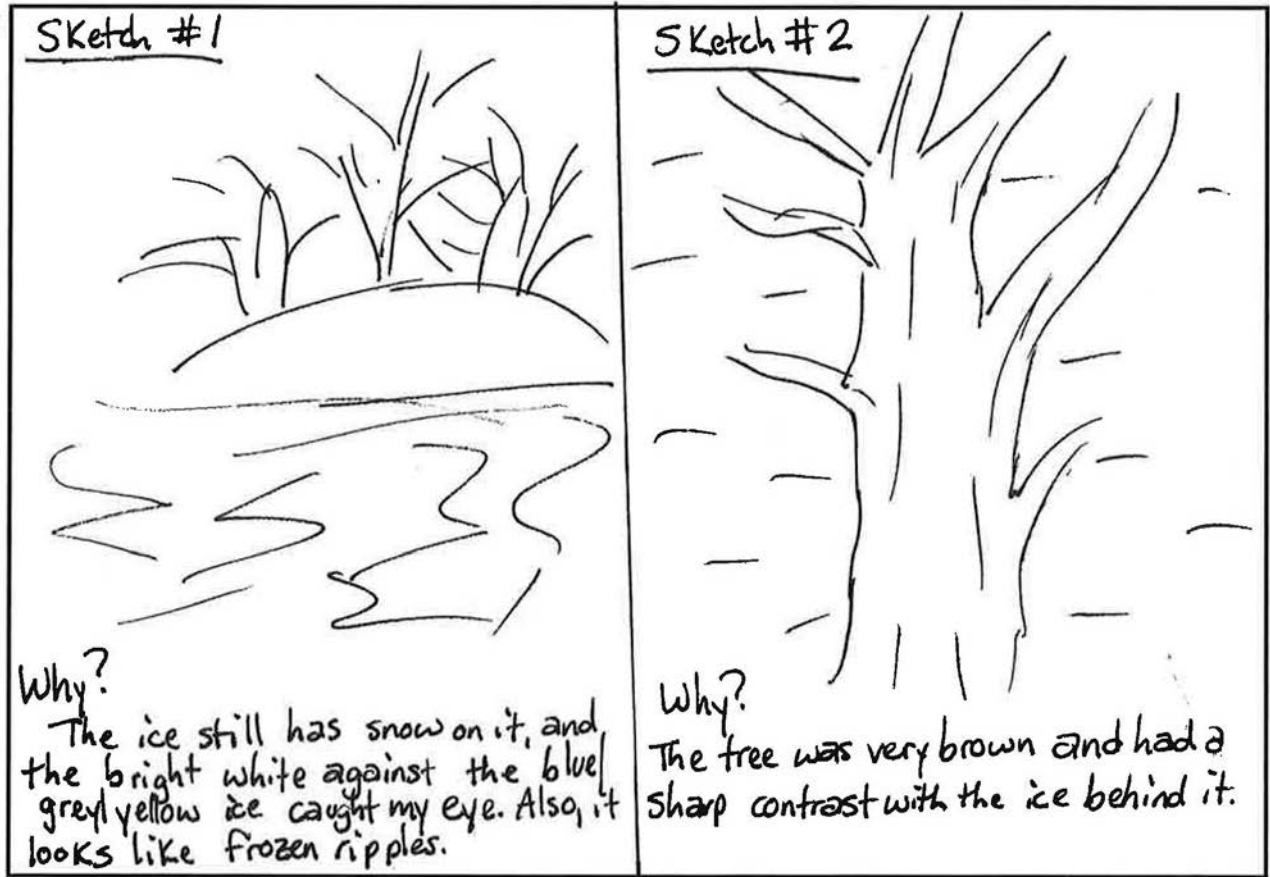


There are different types of sketching that can be done, each one changing how you look at the subject and how you record the details of it. Three different styles are described here.

- Memory
 - Take one minute to memorize your subject – focus on key features. Put the subject out of sight and create a line drawing from memory.
 - Be sure to include the memorized features. Add written observations such as size, texture, and color.
 - After several minutes, compare the drawing with the object.
 - This exercise is to encourage observation – see it, remember it, and then put it on paper later.
- Contour/Continuous Line
 - Looking only at the subject (not the paper), sketch without removing your pencil point from the paper. Do not peek at your paper!
 - Draw features, not just the outline.
 - This exercise focuses on observation.
- Gesture
 - Very quick sketching! The overall form is captured briefly but with energy. No pausing, no erasing, just try to get the idea of what is happening down on the paper.
 - Try a gesture sketch of the subject in less than 5 seconds. Repeat up to 30 seconds.
 - Very useful in the field where the situation can change at any moment. Get the observations that you made down on the paper quickly.

Catches Your Eye

Used for details, feelings, observation, sketching, writing.



This journal page causes you to try to identify why something caught your eye when you looked around—which can be hard to do!

- Take a look around. What do you see that catches your eye?
- Sketch it. At the bottom, write a sentence or two about why that caught your eye. Was it bright? Oddly shaped? Did it remind you of something? What did you feel when you saw it?

Through A Window

Used for details, observation, sketching.

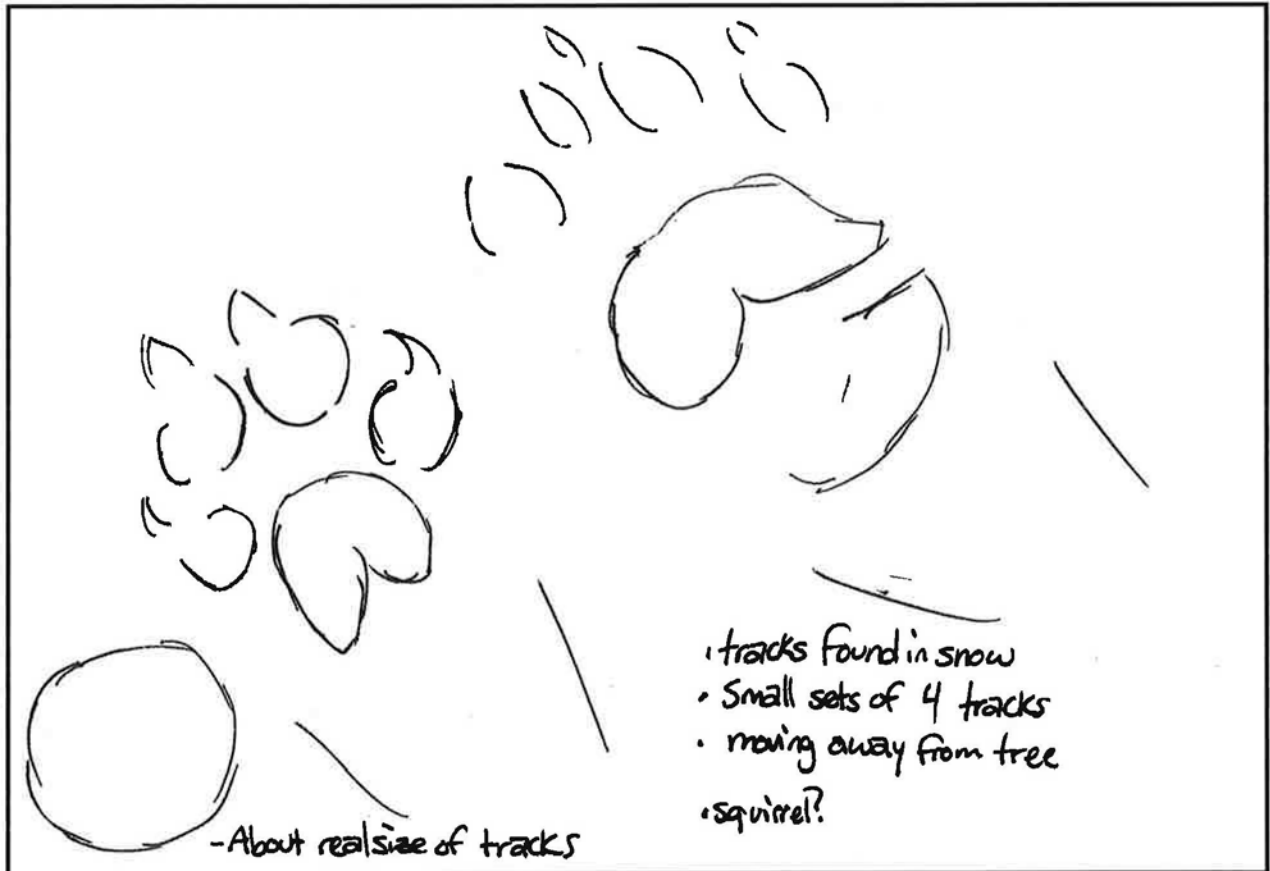


Windows are so often a part of how we interact with the natural world. This exercise changes how we see through a window by making us pay attention to what is in that rectangle or other shape.

- Take a picture frame, or a piece of paper/post-it turned into a frame (fold in half, cut out a rectangle on the fold, unfold), or look through a window.
- Sketch only what you see through the opening. This will focus your attention on the details in the section that you can see, not on what else is going on.

Track Sketching

Used for details, identification, observation, recording, sketching.



This activity helps you to understand that although you may not see the animals living outside, they are still around! This is best done either in the winter when snow is on the ground, or in a muddy area. If no tracks are found, it can be done from a track book, but the physical tracks are best to make you really look for distinguishing details.


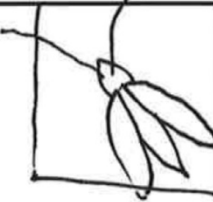
- Search for and find some tracks.
- Sketch the tracks. Include information about size, how close together they appear to be, and some information about the location they were found in. This information can help to identify the animal that created the track.

Observation

- Small Things, Small Wonders 25
- Color Map 26
- Seton Watch 27
- Sound Map 28
- Focused Observations 29

Small Things, Small Wonders

Used for details, identification, math, observation, recording, sketching, writing.

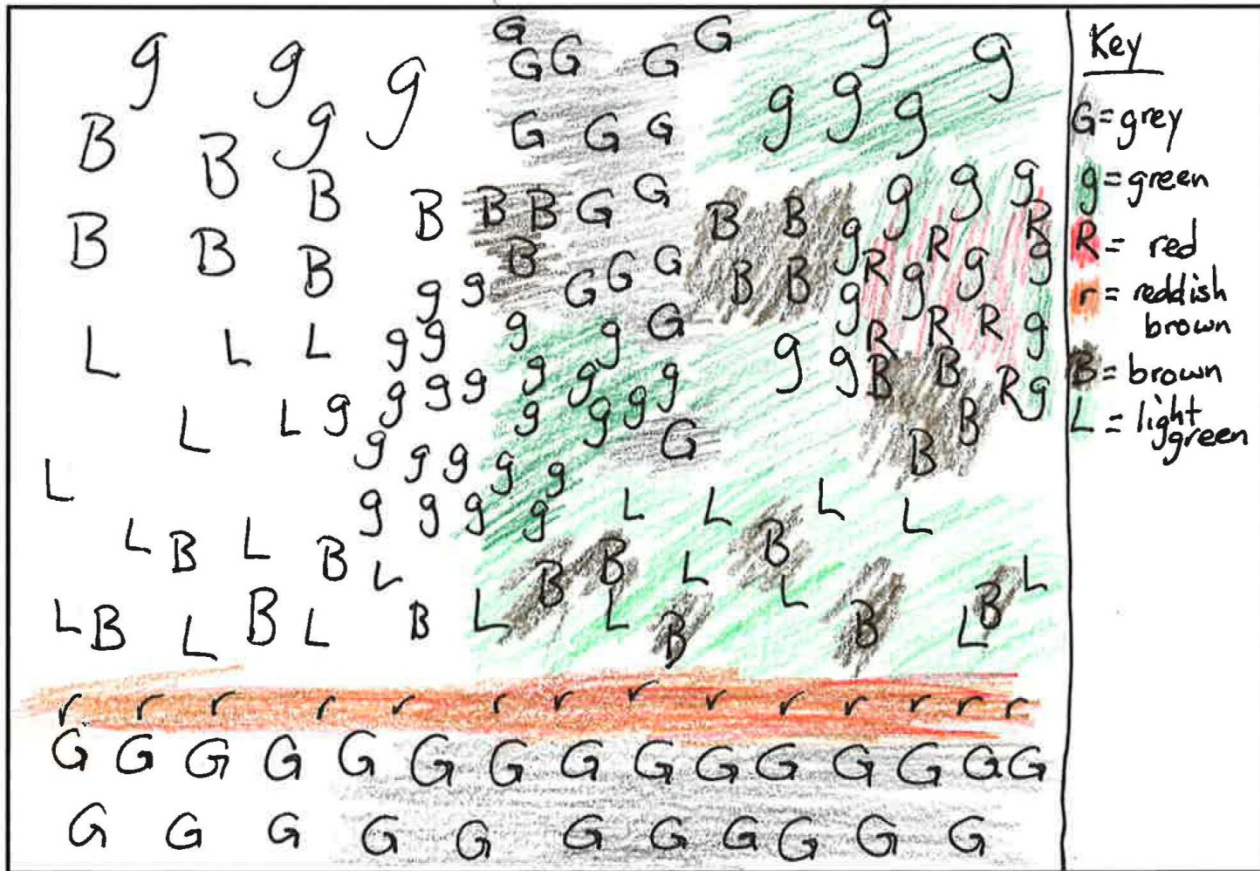
<p><u>Small Thing I</u></p> <ul style="list-style-type: none"> • tiny • transparent wings • brown 		<p><u>Small Thing II</u></p> <ul style="list-style-type: none"> • light lime green color body • whitish wings • two long, waving antennae 	
<p><u>Insects</u> </p> <p><u>Spiders</u> </p> <p><u>Other</u> </p>	<p><u>Small Thing III</u></p>	<p><u>Small Thing IV</u></p>	

This journal page encourages you to stop and look at the small things underneath your feet. They may be hidden underneath some leaves, or may just be moving around on the ground, but we often do not take the time to stop and look for the little things.

- Sit in one area and look for small things around you. They may be insects, spiders, or something else!
- Section off your journal to provide space for focusing on different small things.
- Sketch whatever you find. (Fill the whole sketch space—draw it much larger than it is, so that details are visible!)
- List details of each small thing that you find, especially details you cannot tell from your drawing.
- Tally the total number of insects, spiders, and 'other' seen (including those not sketched/detailed). This requires identifying if something is an insect or a spider or neither, though you do not need to know a specific species.

Color Map

Used for map, observation, sketching.




This observation activity introduces sketching, without the pressure of 'being good at drawing.' As you are focusing on shapes and colors without any firm lines delineating them, it is more like a paint-by-the-numbers. This means you are able to record your observations regardless of what you feel your artistic level is.

- Sit in one location facing a scene or landscape.
- Choose a color you see to start with. Give it a symbol in the key.
 - Make the shape you see with that color's symbol in the drawing section (such as a round tree top with green leaves).
- Repeat until the scene is complete with the symbols.
- Leave the location.
- Use colored pencils or crayons to color the scene in based on the symbols and key.

Seton Watch

Used for descriptions, feelings, observation, recording, senses, sketching, writing.

<p><u>Favorite Moment During</u></p> <p>• There were a lot of geese migrating overhead, and most were calling, so all I could hear for a while was the honking of flying geese!</p>	<p><u>Mystery</u></p> <p>• How long do milkweed pods stay on the plant after they empty?</p>
<p><u>Sketch</u></p>  <p>Empty milkweed pods with a tall grass in front.</p>	<p><u>Discoveries</u></p> <p>• The snow on the ground glitters like diamonds in the sun.</p> <p>• I like seeing the snow piled around the base of the grasses, with the long tan stems and stalks poking up.</p>

This exercise, inspired by the journaling technique of Ernest Thompson Seton, has you remain still in one spot and allow enough time for the ‘ripples’ of your presence to settle and nature to resume around you. Then you make observations and record them in your journal. (Seton, backwards, spells “notes.”)

The goal is to remain seated for as long as it takes nature to return around you. However, sitting still for so long can be extremely difficult! Begin small—start with about 5 minutes, and slowly extend that time whenever you do this activity. It takes practice to remain still and quiet for so long!

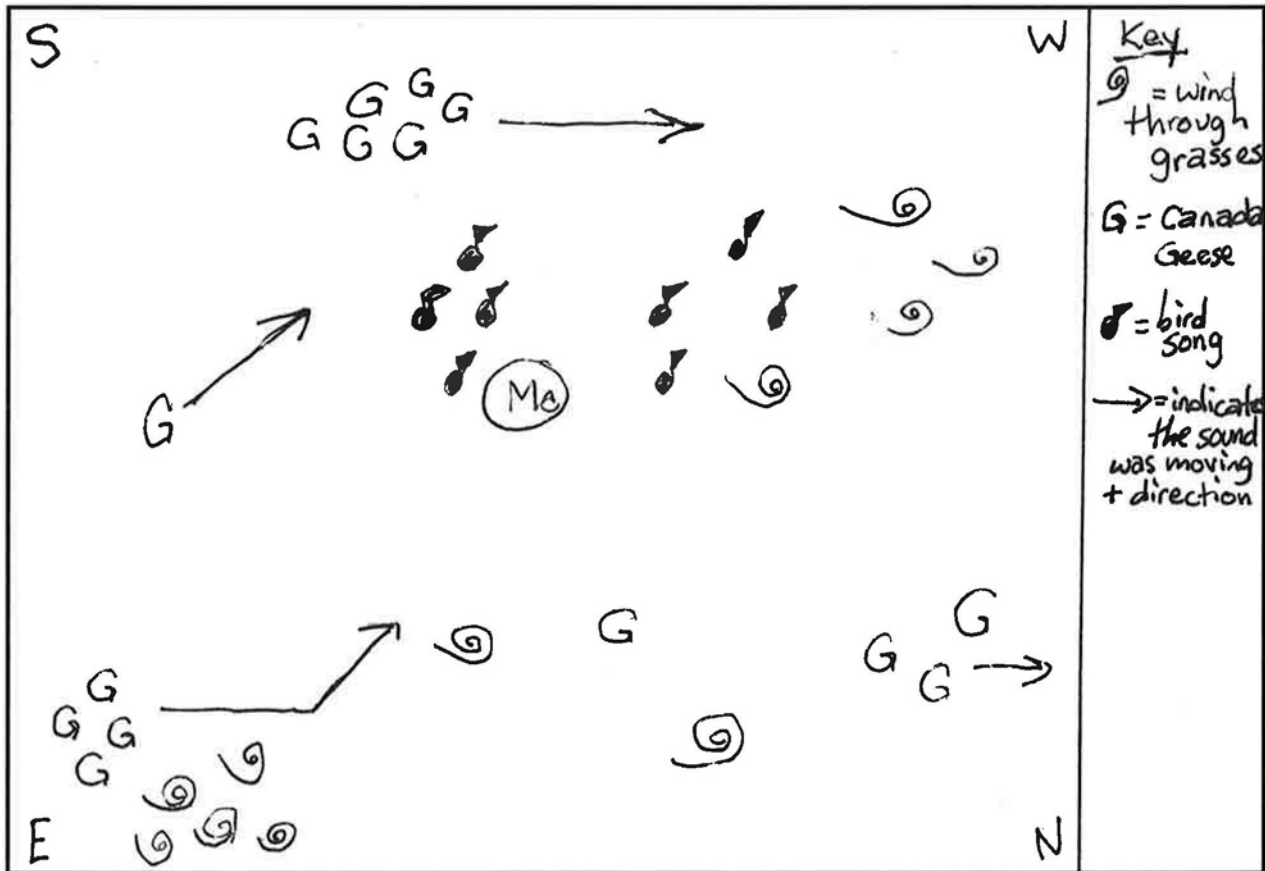
Quadrants are not required for this activity; choose your own method of recording your observations if you want. Labeled sections can provide some guidance on what to record. For example:

- **Sketching** is an excellent way to show what is nearby.
- **Discoveries** makes you really look around to see something you had not paid attention to before.
- **Favorite Moment During** makes you pick something that you really liked!
- **Mystery** or **Question** is where you can record everything you don’t know the answer to.

If you are doing this with other people (or with a class of students), sit individuals down with separation between them so they do not hold conversations. Try for a minimum of 10 feet from each other, and make sure everyone is visible to you as the leader. Remind them not to stand up, and if they have something they want to say, write it in their journal instead.

Sound Map

Used for map, observation, recording, senses.

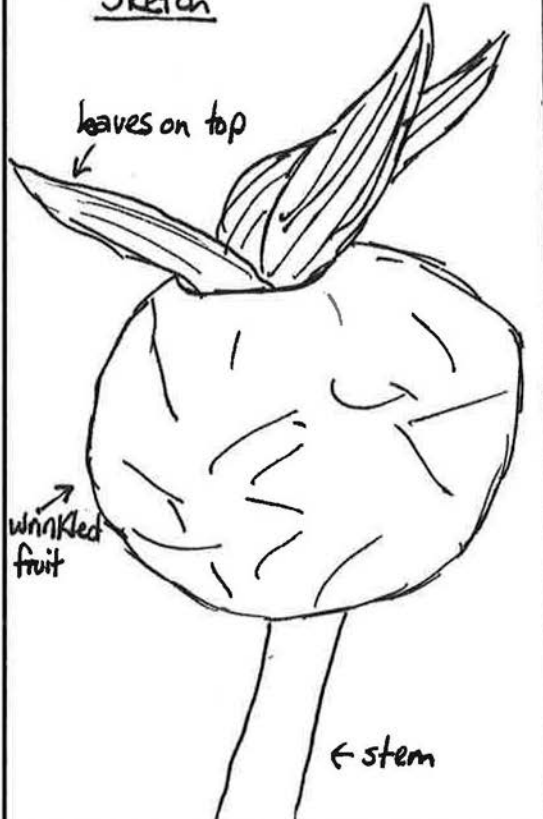


This observation activity focuses your attention on what you can hear, not what you can see, and has you try to identify what is making that sound.

- Section off a “key” on the side of the page.
- In the drawing section, write “Me” in the center and circle it. This represents where you are sitting, facing one direction.
- As you hear sounds, assign them a symbol (defined in the key) and add them to the map based on where you hear them.
 - Close sounds are drawn close to “Me”, furthest sounds drawn along the edge of the space, etc.
- Use an arrow to indicate which way the sound is moving if it is a continuous sound being made (ie geese flying overhead and calling as they fly).
- You may want to include which way is North on the map, as an indication of which direction you were facing.

Focused Observations

Used for critical thinking, details, observation, recording, sketching.

<p><u>Sketch</u></p>  <p>leaves on top</p> <p>wrinkled fruit</p> <p>← stem</p>	<p><u>Observations</u></p> <ul style="list-style-type: none">• The stem of the rosehip is a very brilliant and deep red. <p><u>Questions</u></p> <ul style="list-style-type: none">• Why are some rosehip fruits a deep red, but others are wrinkled and gone brown, orange, and yellow? <p><u>Adaptations</u></p> <ul style="list-style-type: none">• Thorns to deter mammals from walking into it?• Bright color to attract birds to eat + spread seeds? <p><u>Discoveries</u></p> <ul style="list-style-type: none">• The stem of a rosehip has sharp thorns/spines, though many appear to be broken off. Where they broke off, there are white spots.
--	--

This activity is for encouraging close observation through examination with the senses, and the recording of details.

- Select a natural object to focus your observation on.
- Section the page off into at least three, so that you have a section for the following areas you want to include:
 - With each **sketch** include labels explaining details, listing color, etc.
 - List **observations** about the object.
 - List any **questions** you come up with during your observation.
 - List any **adaptations** you think it has. Think about where it lives, how it lives, what it does.
 - List any **discoveries** that you made about the object.

Writing

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- Nature's Outdoor Alphabet 33
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Daily

Used for critical thinking, descriptions, feelings, phenology, recording, reference, writing.

Today started off with a Wild Side Walk. There were 5 people who came on the walk! At the pond we saw some cool birds - great egrets, a killdeer, a belted kingfisher, great blue herons, and more. There was also a duck that was either a mallard/black duck hybrid, or a mallard between plumages, or...

etc.

Sometimes you may prefer using the journal as a daily entry location, with a description of what you did during the day, things that happened, etc. This is perfectly acceptable! Your journal is yours, and however you want to use it is allowed. Keeping a daily record of what you did, what happened, how a program went, etc. is a great way to keep track of what has occurred. This method helps to keep memories fresher and longer lasting, as writing down everything makes you think back to it. If you are interested in writing (stories, poems, etc) this can help to provide you with ideas from your life, either currently or when you look back at it in the future.

Don't censor yourself. Write whatever you are thinking or feeling down; this is not something you need to share with anyone if you don't want to. This is your space to write whatever you want.

Don't have a lot of time? Write one sentence about the day.

If you can't journal every day, try to journal at least once a week. Be consistent—pick a time or a day you can set aside to do it.

Free Write

Used for creative writing, recording, writing.

Free Write Friday - Seton Watch

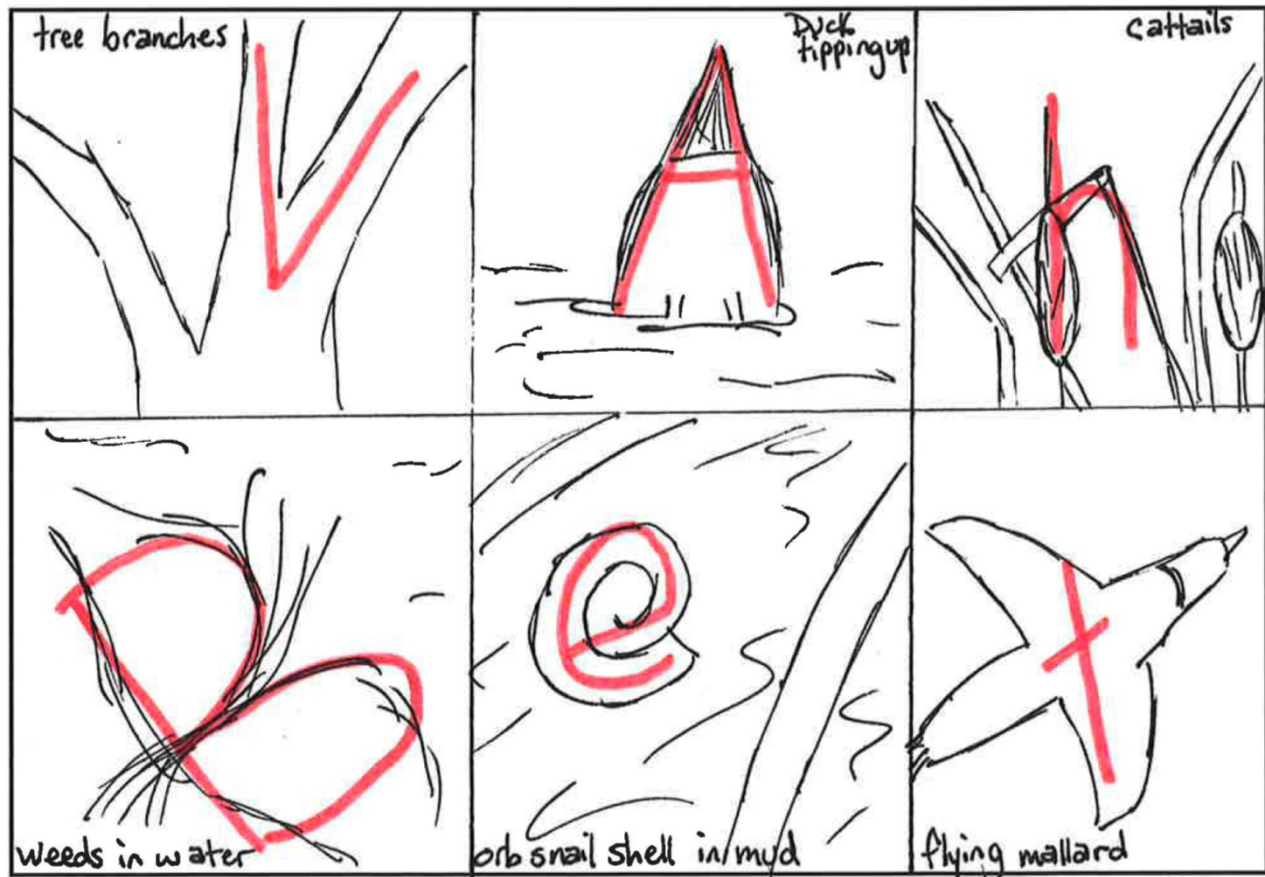
Today we had a Seton Watch by the cattails. There was a light snow flurry falling while we were out there, landing on already snowy ground. I liked seeing them land on my coat. They were very pretty snow crystals! It was pretty chilly out, especially sitting in the snow.

A Free Write is an activity for encouraging the use of a nature journal as a place to write. If done with a group, it is a good way to discover what someone is thinking about from the day or after the program.

- Free Write may have a theme ('free write about the birds we saw') or may be more open ('free write about today'), depending on the program, the age, and the intent.

Nature's Outdoor Alphabet

Used for details, observation, recording, sketching.

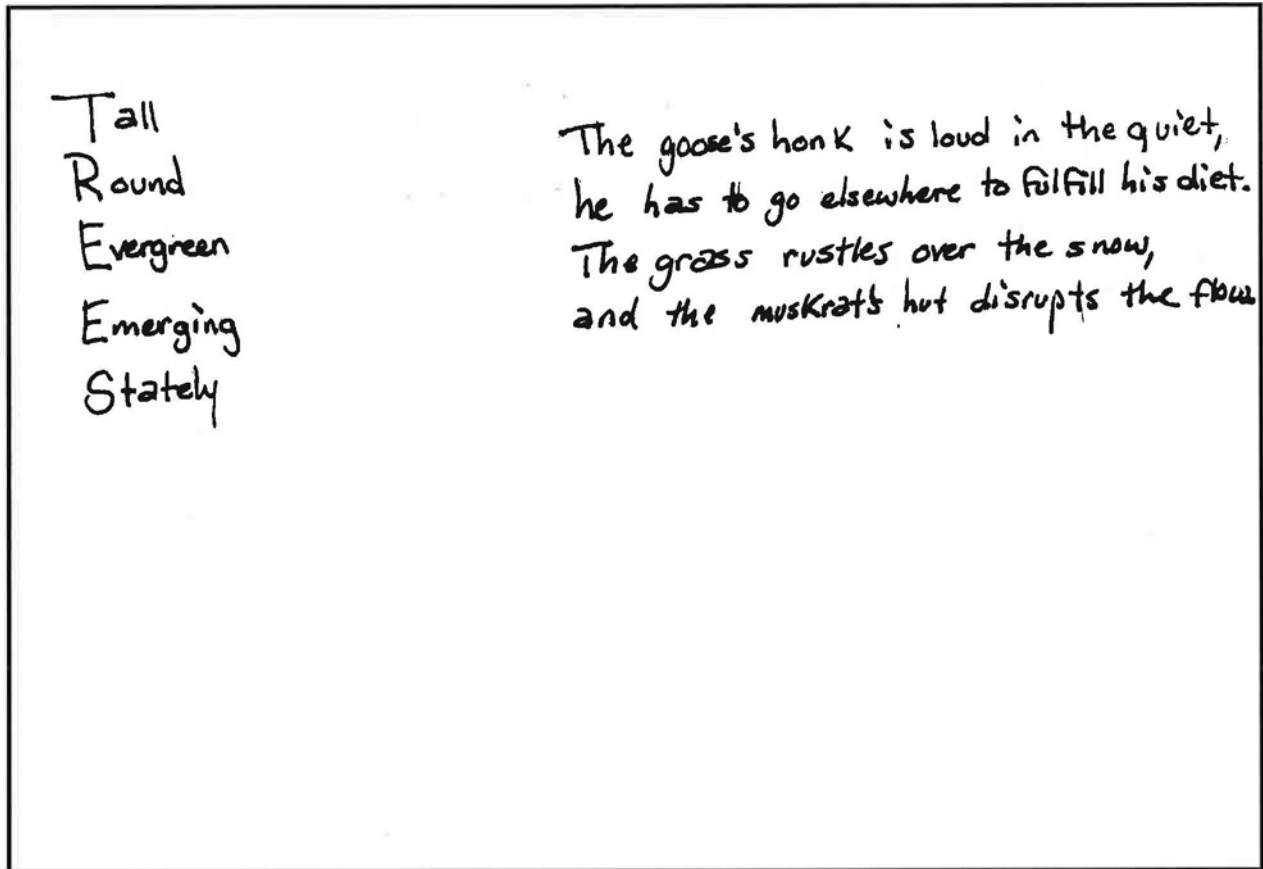


This activity encourages you to look at nature differently. Instead of just seeing the object, try to look for shapes—or, in this case, letters. Change what you look for when you look outside!

- The idea is to find letters of the alphabet in nature—often, try to find enough to spell your name.
- When you find a letter, sketch the scene in the journal, then highlight the letter using a colored pencil or marker.
- A different viewer should be able to look at your journal and see “oh, you saw a ‘t’ in a pair of trees” or whatever the moment was—don’t just draw the letter.

Poetry

Used for creative writing, descriptions, details, feelings, observation, senses, writing.



Poetry comes in many different styles. Below and on the next page are some examples of poetry types that can be used. The acrostic and haiku styles are both commonly used with writing nature poetry. The styles on the next page are perhaps more uncommon. Refer to observations previously made in the journal, or make new observations, to write poems about nature.

- Acrostic –

- The first letter in each line, when read vertically, spells out the name of something or conveys some other kind of message.

Towering
Reaching
Extending
Embracing the sky

- Haiku –

- Traditional Japanese form of poetry dealing with nature, consisting of three lines – first line has 5 syllables, second line has 7, third line has 5 again.

The snow-covered tree
Sparkles in the soft moonlight
The wind rushes by.

- Cinquain –
 - Consist of 5 lines, each line has a mandatory purpose + number of syllables:
 - 1) title in two syllables,
 - 2) description of the title in four syllables,
 - 3) description of action in six syllables,
 - 4) description of a feeling in eight syllables,
 - 5) another word for the title in two syllables.

Forests
Graceful, growing
Climbing among the clouds
Calmly awaiting the sunrise
Alive

- Diamante –
 - Diamond-shaped and consisting of seven lines, following this pattern: noun, adjective adjective, participle participle participle, noun noun noun noun, participle participle participle, adjective adjective, noun.

Seed
Small buried
Growing breathing living
Protection oxygen shade habitat
Dying rotting crumbling
Moist rich
Soil

- Free Verse –
 - Free verse poems have no regular meter and rhythm, do not follow a proper rhyme scheme as such (have no set rules), and are based on normal pauses and natural rhythmical phrases.

A noiseless patient spider,
I mark'd where on a little promontory it stood
isolated,
Mark'd how to explore the vacant vast surrounding,
It launch'd forth filament, filament, filament, out of
itself,
Ever unreeling them, ever tirelessly speeding them.

And you O my soul where you stand,
Surrounded, detached, in measureless oceans of
space,.....
Till the bridge you will need be form'd, till the ductile
anchor hold,
Till the gossamer thread you fling catch somewhere,
O my soul.

(A Noiseless Patient Spider by Walt Whitman)

- Windspark –
 - 5 lines with the following pattern:
 - 1) "I dreamed",
 - 2) "I was...",
 - 3) where,
 - 4) an action, and
 - 5) how.

I dreamed
I was a tree
On a hillside
Playing with the wind
Joyfully.

- Rhyming -
 - The poem may rhyme in an AA BB, AB AB, or other style.

The steadily falling cold August rains
Continue to pour upon Cheshires lanes;
Upon flattening fields of saddened wheat,
Soaking the grass, splashing the feet.

(Except from *August Rains* by John Fleming, via poetrysoup.com)

- Picture Poetry –
 - The words in picture poetry form a picture of what is happening in the poem.

Branches
Shade Rubber
Fruit Clothes
Paper Wind Barrier Fuel
Furniture Resource Nuts
Tree Houses Maple Syrup Parks
Multiple Uses Seeds Oxygen
Lumber Habitat Energy
Building Materials
Baseball Bats Leaves
Photosynthesis
Roots
Gum
Cork
Books
Paint
Cocoa
Sponge

Reflection

Used for creative writing, critical thinking, details, feelings, observation, writing.

On my walk today I found what appears to be the Killsite of a small bird (brown) by a predator - possibly fox, as there was fox scat right there. Given the light snow cover, I figure it occurred earlier this morning. There were no visible tracks, but the snow had not accumulated on the feathers or scat. I took several photos, and brought two feathers back to use in identification. After research both online and in books, I have determined that the feathers are from an American Woodcock. (These are the "Skydance" birds - they also have a hilarious ground dance.)

After an activity or a day of activities, writing a reflection can provide a way to think back and consider what happened. It may provide new insight into something that took place. You can simply think about a program you just completed, or can get more in depth with topics included below.

- The meaning of a **quote** and how it connects with where you are. (Example: "Sunshine is delicious, rain is refreshing, wind braces us up, snow is exhilarating; there is really no such thing as bad weather, only different kinds of good weather." John Ruskin.)
- **Human Footprints** – How have humans interacted with the natural area around you? In what ways do they shape the area? In what ways do plants and animals influence and affect the humans? Short term and long term.
- **A day in the life** - Consider/visualize the changes that take place where you are in a 24 hour period. What happens with the plants? What animals are around at what times? How do they interact? Is there any human interaction? Can you tell a story of the last 24 hours?
- **Mind Map** – Sit quiet and enjoy the area, then start to map your thoughts. This shows the connections and pathways your thoughts travel—closely linked to nature or not!
- **Personal History** – How does this sport and day connect to your history? Does it remind you of the past somehow? How might it connect to your future?
- **Senses** – Explore the area using only one sense. Describe the site based on that sense. What do you notice new or different when you focus on a single sense? What are you feeling and thinking?
- **Item Perspective** – Select an item in the area. Consider its "existence" (living or non). Describe its "life."
- **Personification** – Select some items from the surrounding area to 'personify.' Write a narrative of how the personified organisms interact with each other. Essentially, give human thoughts and feelings to items and pretend that they can talk. What would they say and do?

Thankful Thoughts

Used for creative writing, critical thinking, feelings, writing.

<p><u>My Thankfulness / I'm Thankful For:</u></p> <ul style="list-style-type: none">• the chance to see this ecosystem in its various colors• the friends I have made during my seasonal positions	<p><u>Beauty</u></p> <ul style="list-style-type: none">• the frosted trees in the sunlight, gleaming like white diamonds• melting frost like raindrops on the plants
<p><u>If I were... this is what I am thankful for:</u></p> <ul style="list-style-type: none">• the frost -<ul style="list-style-type: none">- the many surfaces available for me to cling to- the sun helping me change back into water• a mink -<ul style="list-style-type: none">- my warm fur coat covering my body- my small size allowing me to slip through without much frost	<p><u>Wonder</u></p> <ul style="list-style-type: none">• how long does it take the frost to form?• what animal made the tracks on the trail earlier?

This activity is one that may be done around Thanksgiving time, but is also applicable to use at any other point in the year as well. It is always a good idea to stop and think about what you have to be thankful for!

- Create sections in the journal, or just address the following in different parts of the page.
 - "If I were a ___, this is what I am thankful for."
 - "I'm thankful to be visiting here because..." / "My Thankfulness..."
 - "Beauty..." – what do you see that is beautiful today?
 - "Wonder..." (questions)

Inquiry Method Exercise

Used for critical thinking, observation, recording, science, writing.

See an object/phenomenon/have a topic. • Feathers caught in short tree + on ground.

Ask questions to students about it. Try to give the kids a way to relate to it. • Have you seen this before? What do you think happened

Think about additional techniques you could employ to further engage the students - perspective, roleplaying, analogies to the familiar, comparisons to previous trailside encounters. ↳ blue jay likely was nabbed off the branch by a hawk

Any special considerations that need to be made regarding space or conditions?
(Sun location, thorns, visible to all, etc.)

This activity is a practice activity for leading a group in the field. It focuses on the inquiry method, or asking questions to lead the students to thinking of the answer.

In your journal, record the following things. When doing this with a group, it would not be written, but for this exercise it will be.

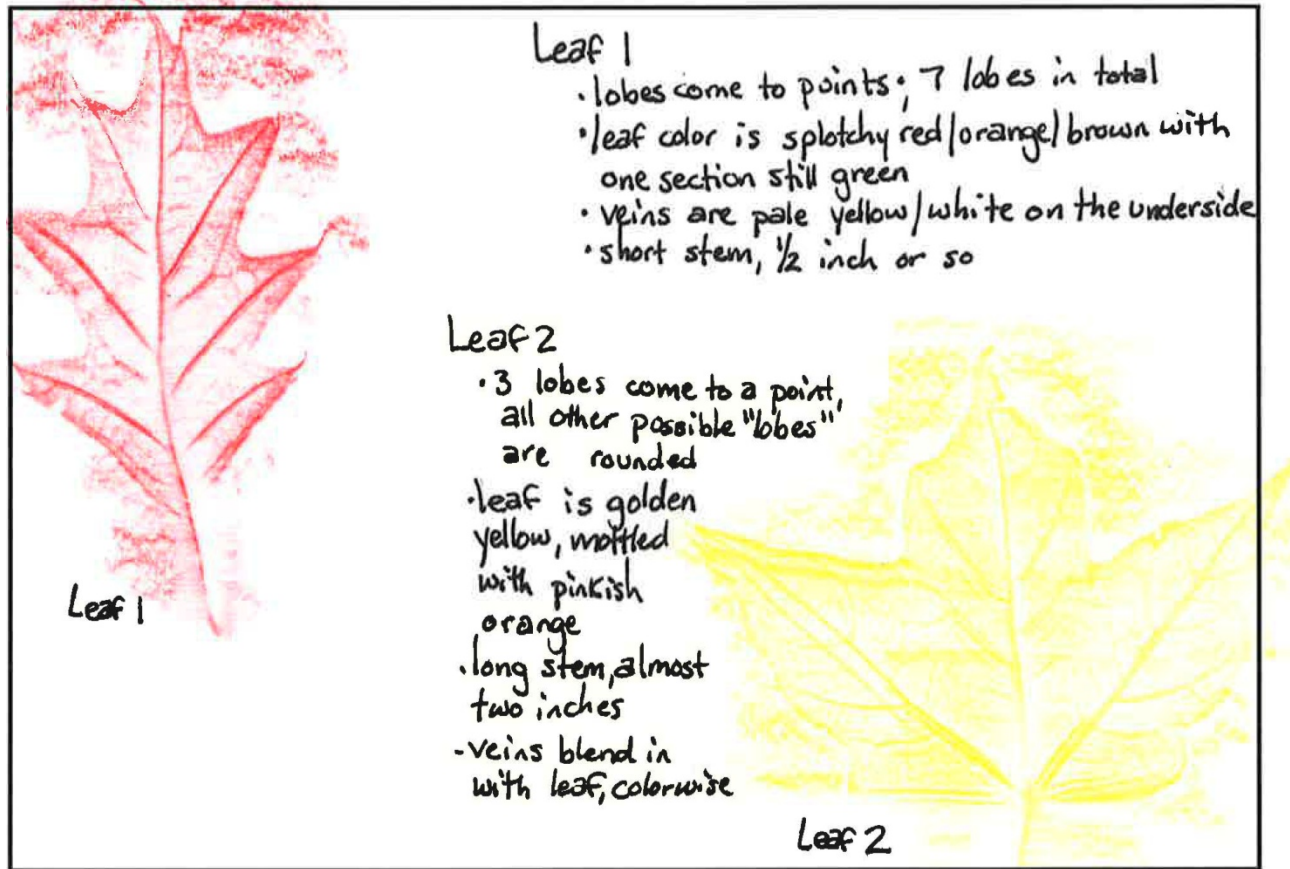
- **Observe** an object/phenomenon/have a topic prepared.
- **Ask questions** about the object/phenomenon/topic.
- Try to incorporate something that gives the audience a way to relate to it (have you seen something like this before?). This may be known as the **personal connection**.
- Think about **additional techniques** you could employ to further engage the audience—a change in perspective (mental or physical, ie lay down), roleplaying, analogies to the familiar, comparisons to previous trailside encounters.
- Are there any **special considerations** that need to be made regarding space or conditions? (ie, are they looking into the sun + can you change that, thorns, can everyone see it, etc.)

Activity

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Leaf Rubbings and Details

Used for details, identification, observation, writing.



There are lots of leaves on the ground in the fall—how often do you look closely at them? This activity encourages you to do just that.

- Collect leaves from the ground and place them underneath the page. Using a stripped crayon (or a very flat pencil), rub over the paper in the same direction. Label the leaf **rubbing** with a number.
- For each leaf rubbing, come up with 3 **details** to describe the leaf. Include details you get from looking at the leaf itself and not at the rubbing—such as color, fuzzy or waxy feeling, etc.
- Try to **identify** what type of tree the leaf came from. You can refer to guides later, using the information that you collected.

Wonder Walk

Used for descriptions, feelings, observation, recording, writing.

<p><u>Awe</u></p> <ul style="list-style-type: none">• the small size of the chickadees flying overhead• the ducks came and splashed down right in front of us. Could hear the splashes very well.	<p><u>Beautiful</u></p> <ul style="list-style-type: none">• the open wood in a split tree- ivory against lichen + brown• pale grey clouds moving against a whiter sky.
<p><u>Surprise!</u></p> <ul style="list-style-type: none">• bird's nest hidden in low tree• still finding seeds on plants despite the wintry time of year!	

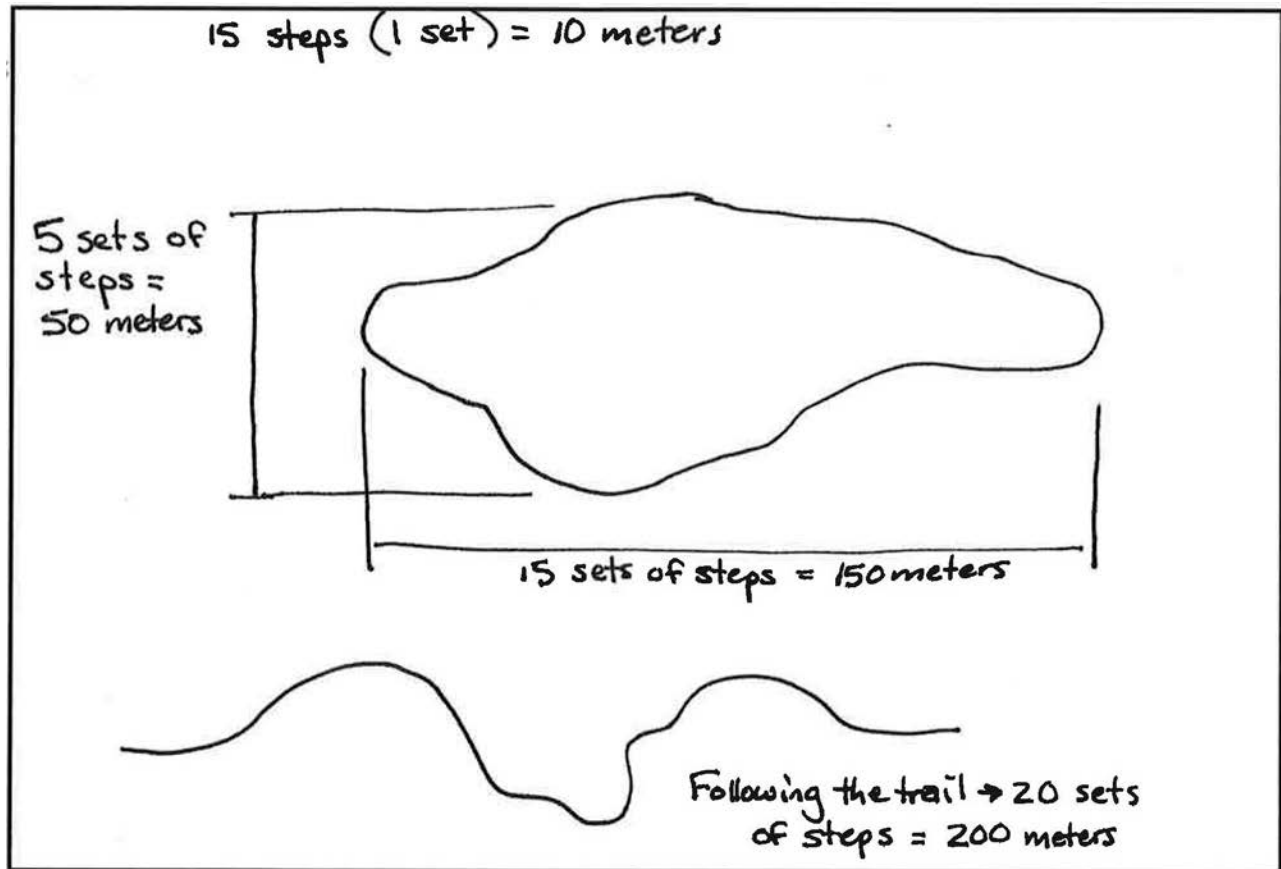
Rachel Carson is famous for writing the book Silent Spring, but she is also the author of The Sense of Wonder where she explains that adults need to nurture a child's inborn sense of wonder about the natural world—and try to find it again themselves. Some quotes from The Sense of Wonder include *"Those who contemplate the beauty of the earth find reserves of strength that will endure as long as life lasts."* and *"It is a wholesome and necessary thing for us to turn again to the earth and in the contemplation of her beauties to know the sense of wonder and humility."*

This activity is a way to try to look around at the nature surrounding you and try to find that sense of wonder again.

- Go on a walk/hike with the goal of looking at what is happening around you, how it makes you feel, and recording it in the appropriate 'feelings' section.
- Sections should be related to **feelings**, which may be titled such as **Awe** (beautiful/surprise/makes you think "amazing"), **Surprised Me**, or **Beautiful**.
 - You may include other sections if so inclined. Some examples would be a "**Sketch**" section or a "**Special Part**" section where you would mention what was the most special part of the walk.

Estimating Measurements

Used for engineering, map, math.



This activity introduces estimating distances and measurements. Being able to accurately estimate this can be an extremely useful skill for giving directions, orienteering, and more. In general, 15 regular steps equals 10 meters. (Every time one foot moves it is a step—right foot forward and left foot forward = 2 steps, not 1 step.) Centimeters may be estimated with the width of your pinky finger, and a foot (30 centimeters) can be estimated with the distance from your elbow to just before the wrist. (If you have a ruler, you can put it at your elbow and see for sure where that spot should be on your arm.)

- Go outside and find something to measure—for example, one of the restored meadows. Whatever the size, you are measuring from the widest point to the widest point, so there may be some off-trail walking required. (If the trail is relatively straight along the length or width, however, you can use it!)
- Measure both **length** and **width**.
 - If you have more than one person, you can use a chain—walk 15 steps/10 meters and then step to the side (making set #1), the next person walks 15 steps from you (making set #2), etc. Recycle people up from the earliest sets until you have reached the end—add a 0 to that final number of sets (every time a person stepped aside) for the total meters.
 - If only one person, keep track of the number of times you take 15 steps, and then just add a 0 to that number. (For example, took 15 steps 5 times = 50 meters.)

Measuring long distances can be practiced during hikes, especially if you need to get a group that has done this before back to a location quickly and quietly. Tell them to measure how long the trail is, and then walk back. Everyone should be counting quietly, and not carrying on conversations! Then, after reaching your destination, compare results. Did everyone get close to the same number?

BioBlitz

Used for identification, observation, phenology, recording.

<u>Birds</u>	Scaup	<u>Mammals</u>
Barn Swallow	Yellow-headed Blackbird	13-lined ground squirrel
Sandhill Crane	Bobolink	Deer
Mallards	Trumpeter Swans	<u>Herps</u>
Red-winged Blackbirds	Chimney Swift	Frog
Common Grackle	American Robin	Painted Turtle
Yellow Warbler	Great Egret	<u>Plants</u>
Great Blue Heron	Killdeer	Birch trees
Black+White Warbler	Hooded Merganser	Maple trees
Blue Jay	Loon	Oak trees
Black-capped Chickadee	Brown-headed Cowbird	Mushrooms
Crow	Turkey Vulture	Cattails
Chipping Sparrow	Field Sparrow	Dandelion
Yellow-rumped warbler	Wild Turkey	Blood root
Baltimore Oriole	Blue Wing Teal	Yellow Bellwort
Clay colored Sparrow		Round-lobed Hepatica
Goldfinch	<u>Invertebrates</u>	Spider
Hairy Woodpecker	Ants	Purple/blue moth?
Tree Swallow	Dragonfly	Fly
(Maplewood State Park, MN, 5/17/13)	Tick	Bright red bug



The Bioblitz journal activity is a listing of all organisms observed (and at least partially identified) throughout a period of time. It is a personal version of a "BioBlitz," 24-hour events in which teams of volunteer scientists and community members work together to find and identify as many species of plants, animals, microbes, fungi, and other organisms as possible.

This information gives a snapshot of what is in an area at a given time. It may be used to track when migrants begin to travel or arrive, or when animals become active, or when plants begin to bloom—especially if the Bioblitz is repeated in the same area multiple times over a year.

- Keep track of all organisms observed over a period of time, preferably at least several hours.
- This includes **birds**, **mammals**, **herps** (reptiles and amphibians), **invertebrates**, and **plants**.
 - They may be marked as unknown, but try to identify or at least describe them as opposed to just tracking "unknown."
 - You may also include **fungi** or other types of organisms that you can partially identify.
- You do not need to keep a tally of how many individuals you see, though you can if so interested.

Natural Inventions

Used for creative writing, critical thinking, engineering, observation.

<p><u>Sketch Natural Item</u></p> <p>Name - Cattail Seed Head</p> 	<p><u>Describe Natural Item</u></p> <ul style="list-style-type: none">• brown + tan spotted ; some appear almost white• fuzzy• if bumped, seeds poof out + scatter in the wind
<p><u>Sketch Invention</u></p> <p>Name - Fluff Applier</p> 	<p><u>Describe Invention</u></p> <p>Want that "worked outside all day" look? Take the fluff applier and rub it over yourself to add fluff like you were out among the cattails!</p>

Nature has provided the inspiration for many inventions that we don't even think about. Some of these inventions are inspired by how something works, and others use biomimicry—looking at how nature solves a problem, and using a similar method.

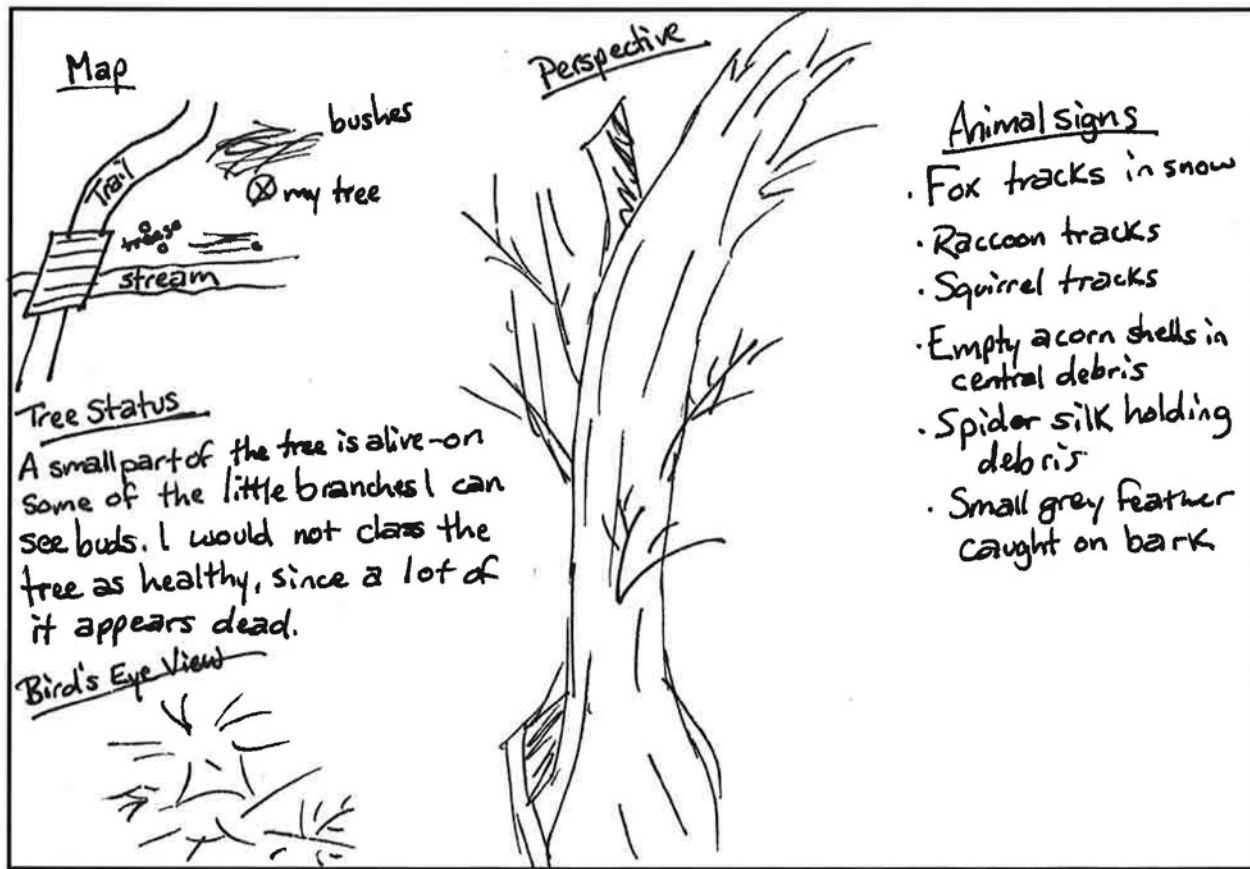
Velcro was inspired by the burdock burr—a tiny seed covered in hundreds of 'hooks' that naturally catch onto the microscopic loops that cover fur, hair, and clothing. In 1941, Swiss engineer George de Mestral, his dog, and burdock burrs crossed paths during his hunting trip in the Alps. He originally envisioned Velcro as a fastener for clothing, and it is now used for a variety of purposes.

Some biomimicry examples include looking at sharkskin and at lotus flowers. Sharkskin is a micro-rough surface and overlapping scales with grooves down the length in alignment with the water flow. This disrupts eddies, allowing water to flow faster past it and discouraging parasitic growth. It has been replicated on the bottom of boats, making them more efficient and requiring less or no cleaning chemicals to be used. The lotus flower has a micro-rough surface that water rolls over and picks up the dust, leaving a clean surface behind. The German company Ispo has developed a micro-rough paint for house exteriors, requiring less cleaning, using the same technique.

- Look around outside to find something in nature. Come up with an invention based on that item! You may also want to think of a problem, then look for natural inspiration for a design to solve it.
 - Include a **sketch** and **description** of the **natural item** that inspired your invention.
 - Include a **sketch** and **description** of the **invention**.

Adopt A Tree

Used for creative writing, details, map, observation, phenology, recording, sketching.



This activity is encourages you to look at a tree and its surroundings in a different way, as well as return to an area again and again to see the changes that occur.

- Select a tree to 'adopt.' Draw a **map** that allows others to locate your tree.
- **Observe** and write about the tree. How does it look? Is it healthy or does it appear dead or damaged? Are all the branches whole or are some missing sections? Are there any other 'status' questions you would like to answer?
- **Identify** the type of tree if possible.
- **Sketch** the tree from different perspectives.
- Are there any **animals** on or near the tree? Are there any signs of animal use on the tree or in the general area? If yes, what?
- What does the natural area **surrounding** it look like?
- Do some bark and/or leaf **rubbings**.
- Do you have any **questions** for or about the tree?
- **Return** to the tree in the future and note any changes or things that remained the same. Observe the area again for new animal signs or differences in the surroundings.

Bird List and Tallies

Used for identification, math, observation, phenology, recording, reference.

<u>Bird List</u>	
G.B. Heron -	
Mallard -	
Mute Swan -	
Barn Swallow -	
Red Winged BB -	
Tree Swallow -	
C. Goose -	
Yellow Warbler -	
A. Crow -	
G. Catbird -	
T. Vulture -	
Prairie Warbler -	
B.h. Cowbird -	

This is more of a side-bar or addition to another journal activity than a full page by itself, though it can be its own depending on the activity. (For example, if you are doing a birding walk, then this may be all that you want to record.) This is the sort of information, paired with location and date data, that you can input to sites such as eBird.






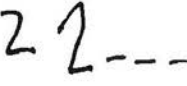
- Keep track of what types of birds you see/hear, and how many of them you see. If you hear more than one at the same time you can note those. List the **names**, and then tally marks for the **number** of individual birds.

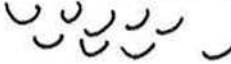


Journal as a Reference

- Bird and Frog Songs and Calls 48
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Bird and Frog Songs and Calls

Used for identification, observation, reference.

<u>Species</u>	<u>Call</u>	<u>Bird Songs</u>	<u>Notes</u>
Red-winged blackbird			Kur-trill, "chuck chuck chick"
Clay-colored sparrow			"bzet"-sounds like a bug
Song sparrow			up up up down stree Squeak

<u>Species</u>	<u>Call</u>	<u>Frog Calls</u>	<u>Notes</u>
Wood Frog			Clucking croaks that resemble a quacking duck
Spring Peepers			High-pitched, rising "peep" given about 1 per second.
Western Chorus Frog			Short, rising, mid-range "cree-ee-ee" Like the sound of a finger running over a fine-toothed comb.

This provides a reference that you can flip to in your journal, as well as helps to cement it in your mind. Being able to identify birds and frogs by sound, without having to see them, is an excellent naturalist skill—many times you will *not* see the bird or the frog!

You can add any of the following, or even more—however it helps you to understand:

- **Name** the bird or frog species.
- Develop a **spectrogram** (a visual notation of the bird song that makes sense to you). Some field guides may include one of these in their notes about the species.
- Write a **phrase** it sounds like (such as "drink your teeea" for an Eastern Towhee). Depending on the field guide, there may be one of these included in the notes about the species.
- Include a **description** of the song or what it sounds like in your own words.

Journaling as a Reference

Keeping a journal can provide you or others with an excellent reference in the future. A journal may be used as a historical record, as a biological inventory tool, or as a phenology tracker. In general, a nature journal is not “one and done” but instead gains value as you use it. It can be used as an identification guide, as a seasonal reference, or simply as a way to look back and see what you have done.

Historical Record

One set of journals that has become a very famous historical record is the set of journals kept during the Lewis and Clark expedition. If the journals had not been kept, it is possible we would not remember Lewis and Clark at all. While your journal may not become famous, it can be a personal history that you are able to look back through and relive moments of your life. This is why including complete information such as full names and locations should be done at least once in the journal.

Biological Inventory

By taking excellent notes on detailed observations, and including sketches that emphasize those details, journals by naturalists have provided information to scientists over the years without killing the animal or plant that is being studied.

Lesley Parilla has an interesting article talking about when drawings are field notes from an expedition, or were created afterwards. Some of the drawings are based on what the specimen looked like when it was alive, which may be completely different after it is preserved. In this case, these drawings are part of a biological inventory.

In addition, a journal may be used as a phenology tracker. Phenology is the study of relationships between climate and periodic biological phenomena, such as bird migration or plant flowering. As you record what you see happening at different times of the year, you may look back in the future and see that the time of occurrence remained the same or changed.

Journaling as Assessment

- Journaling as Assessment

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Journaling as Assessment

There are several ways that journaling can be used as assessment. This section mentions just a few, and only in basic detail, as assessing journaling is something that can and should be adjusted for each audience. These are suggestions that a formal educator may take and expand upon using their own experience, provided here just as a way to show how it may be done. It is not intended as an assessment guide without adjustments.

Rubrics

Rubrics are a good way to show the audience what they will be graded on in their journals, and what the expectations are. It divides the assigned work into components, and then has various levels of mastery clearly described. Each level of mastery gets a different number of points, which may then be added up for a final grade. As described by Heidi Andrade (see the Additional References), those gradations of quality may be described as: “Yes,” “Yes but,” “No but,” and “No.”

Example Rubric:

Rubric for Evaluating a Scrapbook				
Criterion	Quality: 4 pts	3 pts	2 pts	1 pt
Gives enough details.	Yes, I put in enough details to give the reader a sense of time, place, and events.	Yes, I put in some details, but some key details are missing.	No, I didn't put in enough details, but I did include a few.	No, I had almost no details.

Labels

With many of the sketching journal pages, including labels provides something to be grading on. The point of nature journaling is not to be a wonderful artist, but to include observations, details, and information. Sketching is a good way to be able to show some of these, but including a label with the sketch is what makes it valuable. Therefore, including labels whenever sketching, especially descriptive labels, is something that can be used for grading. The assessment may be as basic as “Are the labels there?” or more in-depth about the information included in the label.

Sentence structure

Depending on the age of your audience, writing sentences/spelling words/using grammar and punctuation correctly may be something that gets assessed in a nature journal.

Content

While using content as assessment can be tricky (you do not want to discourage simply because a tangent occurred in the journal as something happened in nature, for example), you can make sure that the topic or activity was addressed during the given time. Depending on the age of the group or the grade level of the students, this may be graded more stringently.

Repeating an Exercise

You may also consider assessment by repeating an exercise more than once, and comparing the resulting journal page for improvements. This is similar to the content assessment. Examples of exercises to repeat are the Seton Watch (try for longer and longer times), Reflection and Focused Observations.

Additional Resources

Resources

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