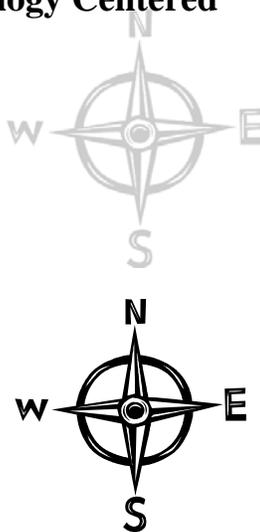


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Compass to the Outdoor Classroom

There is a classroom outside every door, and it is free to those who venture to use it. If you wish to join the growing number of parents and teachers already using the outdoors as a classroom, this guide will provide easy instructions—and the four points of The Compass will show you the way. By using your Place, a Nature Journal, Phenology, and the work of Naturalists, you will experience the excitement of leading your children or students into a learning environment where everyone can experience a sense of wonder every day. We invite you to begin today!

Compass to the Outdoor Classroom: All About Wonder

For You, the Teacher or Parent: Compass to the Outdoor Classroom...A Way into Nature

Let your journey begin - consider the outdoors as a part of your classroom...

"You can get by on charm for about 15 minutes. After that, you better know something."

These words of H. Jackson Brown, Jr. fit in our discussion of "The Compass." We know something, and we have an invitation to share with you! It is not about adding more to your teacher's or parent's overload. This invitation is about an offer of personal refreshment, in-context learning; and year-long enthusiasm and motivation for learning.



Connecting with nature - using
The Compass

It's free! You will not need to purchase curriculum - or kits of equipment. (Actually, a thermometer, wind meter, and field journals would really be helpful.) In this guide we describe what we believe are all the tools, along with many ideas tested by others who have ventured with children into the outdoor classroom.

It works! Take your students outdoors; join the growing number of teachers who have discovered the whole-child impact of connecting with nature. Like them you will discover your students develop greater critical thinking and problem solving skills. You will delight in the noticeable difference in the writing skills your learners develop as you continue to integrate a study of the place outside your school with grade level curriculum. You will also appreciate the many concrete examples that apply to all areas of

curriculum as you explore your outdoor place. You will find yourself refreshed, and with your students, enthused to learn.

You've read this far - now consider this: Our students no longer understand how nature works...

We live in an age of technology, connected to a world of information. We are screen savvy, tech literate, and plugged in but largely nature illiterate. It was Mark Twain who once said, "*Public-school children seem to know only two dates--1492 and 4th of July; and as a rule they don't know what happened on either occasion.*" When we think of what children know about nature today, they seem to know two or three things: about rainforests, polar bears, and whales. But unfortunately, as Richard Louv observed in *Last Child in the Woods*, children—including our students—still do not know how nature works where they live. This is despite the fact that, in the complicated process of education, the foremost goal is always literacy. Most certainly, teaching our children how nature works should be considered a part of the overall literacy for all of America's children. Not knowing how nature works is a form of illiteracy. By using the model found in this guide, you will find four basic tools that will enable you to reach both the minds and hearts of your students by reconnecting them with nature.

Compass to the Outdoor Classroom: All About Wonder

“Everybody needs beauty as well as bread, places to play in and pray in, where nature may heal and give strength to body and soul.” John Muir

John Muir spoke these words after one of his treks into the beauty he found in nature. A benefit of initiating a study of place with your students comes in the opportunity you will have to address the whole-child needs of every student in your class. As Muir wrote, a study of place satisfies the need for beauty. And a study of place will provide much more than important facts. Another naturalist, Rachel Carson, wrote, *“There is something infinitely healing in the repeated refrains of nature - the assurance that dawn comes after night, and spring after winter.”* (Carson, *The Sense of Wonder*)



...Nature's beauty – an everyday human need

Consider this guide an invitation to use an unusual *compass* for guiding your “way into nature.” Use it to find a way back to being connected with nature—you first, and those you work with next.

Reflect on your practice:

Go outside to a quiet place. Sit, listen, and reflect. What did you discover about the “healing” found in nature? How might your students benefit?

Compass to the Outdoor Classroom: All About Wonder

Compass to the Outdoor Classroom...A Way into Nature: Undeniable Realities

Someone once said that “people will accept your ideas much more readily if you tell them that Benjamin Franklin said it first.” Here is our version of a statement of Franklin wisdom.

If you are an educator, parent, or both, the following facts apply to you:

1. In 1950, only 16 percent of the population – 23 million people – lived on farms. (1)
2. In September 2009 there were over 285,000,000 people living in the United States.
3. Out of the September 2009 population, less than 1% claimed farming as an occupation. (2)

These three facts are relevant to education and parenting. Consider these statements: The 20th century could be called the Age of American Agriculture. Early in that century, farming was something that almost all Americans had at least a connection with. This connection provided most Americans with a basic understanding of how nature works. During the same century, the American Education Model was developed and refined. During the Depression, the New Deal and WPA



Regular opportunities to reconnect with nature...another human need

provided employment by funding hundreds of new schools. These buildings and the classrooms within became the standard for the American education system. While the design of school buildings is a small part of the whole education picture, it illustrates the model still used today: Education happens “inside.” (Louv) Today, most children are more comfortable inside, within a manufactured space. (3, 5, 6)

These days, the model for American education is that children learn inside a school building. Although this model worked efficiently and effectively to educate American citizens for decades, today, with less than 1 % of Americans living on or

having any connection with farms, it logically follows that today’s students do not know how nature works. Education is the process of ending illiteracy, yet when the subject is nature; it is clear: American children are **nature illiterate**. It is time to re-examine the education model. The use of the outdoor classroom is critical.

Compass to the Outdoor Classroom: All About Wonder

Free Bonus - Wonder for EVERYONE

Using the outdoors as a classroom is a simple, highly effective intervention to change the nature illiteracy of today's children (and equally, that of their parents). While most of today's educators have not been trained in using the outdoor classroom, all teachers who are willing *can* use the outdoor classroom effectively. Best of all - it's free! Using the outdoors as a classroom can be simply stated as four key principles. These are the points of The Compass:

1. Study **phenology** - what's happening in nature, or the effect of seasonal cycles on biological phenomena. Start with making weekly observations and, eventually, make them daily.
2. Get to know the place outside the school building - use **place-based learning**.
3. Teach yourself and your students to use a **nature journal**. (It could be called a science notebook, too.)
4. Begin to study the writings of **naturalists** - and invite your students to become naturalists.



Wonder - in the eyes of a child

As a teacher or parent, you have a long list of responsibilities and duties. Consider using the outdoor classroom as a means of engaging, motivating, generating enthusiasm for learning, and - of great significance - teaching in context. (4) This simple handbook was written with you, the overloaded teacher, and you, the concerned parent, in mind. You will find these four principles explained in detail. We seek to influence you to take your children outside. Using the outdoor classroom is not considered experimental any longer - it is a proven superior place for learning!

Here is a last thought for you. This thought involves the *wonder for everyone* mentioned in the title of this page. Rachel Carson, naturalist, writer, scientist, and one-time U.S. Fish and Wildlife Service employee, very clearly stated the idea that we all need to experience wonder in her book *The Sense of Wonder*:

If I had influence with the good fairy who is supposed to preside over the christening of all children I should ask that her gift to each child in the world be a sense of wonder so indestructible that it would last throughout life, as an unfailing antidote against the boredom and disenchantments of later years, the sterile preoccupation with things that are artificial, the alienation from the sources of strength.

For this to occur, she adds, *“If a child is to keep alive his inborn sense of wonder without any such gift from the fairies, he needs the companionship of at least one adult who can share it, rediscovering with him the joy, excitement and mystery of the world we live in.”*(Carson)

Teacher, parent, you get to be that adult as you use the outdoors as a classroom. Please read further; examine these four tools. They can be your *compass* to guide you outdoors.

Compass to the Outdoor Classroom: All About Wonder

Place-Based Education: What Is It?

“*Get to know one thing really well.*” These are the words of Byrd Baylor from her children’s book *The Other Way to Listen* (1997). Though written for children, the book offers wise advice for teachers as well: While in the context with grade-level curriculum, you can use place-based learning



Get to know one place really well.

to “get to know one thing really well.” This is the essence of place-based education. We suggest using a natural place close to your classroom—it is the place **outside** your school.

A study of place is the true north of The Compass.

In this brief description of place-based learning, we invite you to consider integrating a study of place - your outside school place - with the curriculum you teach at your grade level.

“*Getting to know home is the most human and necessary of occupations.*” (Walker Leslie, Tallmadge, Wessels) Place-based education

(PBE) is built on the premise that knowing “home” should start in childhood as a foundation for the development of informed and educated adults. In PBE students are taught concepts in language arts, math, science, social studies, science, and other subjects across the curriculum through “*using the local community and the environment as the motivating context.*” (Sobel) Place-based education is comprised of five main principles:

1. Lessons are specific to the geology, ecology, sociology, politics, and dynamics of the place.
2. It is experiential, focused on outdoor field explorations and discoveries.
3. It is multi-disciplinary.
4. It connects place with self and community.
5. It is not focused on advocacy.

Place-based education addresses the ever-changing nature of the learner in the 21st century. In contrast with learners one hundred years ago, some of today’s learners may spend up to 6.5 hours, or more, each day in front of electronic media. With this media a child is capable of obtaining vast amounts of information with a keystroke, yet “being connected” may cause the user to be largely unaware of the intricate systems of earth that sustain life for us all.

Consider providing your students with a gift - free, motivating, and with significant context to connect to almost your entire curriculum: Initiate a study of the place outside the walls of your classroom. For additional adventure, adopt a nature place near your school. With your students, get to know these places “really well.” Turn your place inside out and upside down, examine everything.

Compass to the Outdoor Classroom: All About Wonder

Place-Based Education: Why It Works

Place-based education (PBE) works because:

1. It provides teachers with in-context and concrete experiences that connect to grade level curriculum.
2. In-context and concrete examples increase learning and retention.
3. PBE creates a school-year-long enthusiasm and motivation for learning, as all children have an innate interest in nature.
4. PBE provides both teacher and children with opportunities to go outside. Even for short periods of time such activity will improve time on task and quality of work when students are working inside. Time outside always provides experiences that can be integrated with curriculum.

Place-based is best described as experiential learning with four main components: active student involvement, reflection on experiences, developing new knowledge on the world, applying the knowledge to new situations. (Knapp, *Just Beyond*)



Your place does not need to look like this...study the place where you are...

Reflect on your practice:

Where is the place nearest your classroom to begin learning about nature with your students? The tools you might use to introduce them to this place: Nature Journal, Naturalists, Phenology.

Compass to the Outdoor Classroom: All About Wonder

Put a Nature Journal in Your World

“When we are with nature, we are awake, and we discover many interesting things and reach many a mark we are not aiming at.” John Muir (1838 – 1914)



Today, the Nature Journal can simply combine the best of the Science Notebook and provide the journal user with a means to study the natural world.

Combine the power of a science notebook with the engagement of the real life found in nature: Begin to use a nature journal. Even better, teach your children and yourself how to use this versatile tool. Gaining favor in elementary classrooms in the 1990s, the science notebook has been used to “support literacy while teaching science.”

<http://www.capsi.caltech.edu/research/index.html>

For decades, naturalists have used the nature journal to record data, observations, and reflections about the natural world they were examining. Today, the nature journal can simply combine the best of the science notebook and provide the journal user with a means to study the natural world.

Consider this page an invitation for you to combine the science notebook with the nature journal and use it to develop with your students or children a unique written record of discoveries in the natural world. Putting the nature journal and science notebook concepts together can create a powerful tool for learning and discovery about the world we live in. It becomes a Super Journal, a nature journal with a science flavor

- even multiple flavors (interdisciplinary) - depending upon the purpose you intend at the time.

Regardless of your curricular focus, always consider using the nature journal as the main tool in a study of nature - in school and especially at home. The daily life of a learner, child or adult, at home can become significantly enriched when a nature journal becomes a part of the daily routine.

Compass to the Outdoor Classroom: All About Wonder

Getting Started: Just Start, It Does Not Have to Be Perfect...

Nature Journal Basics

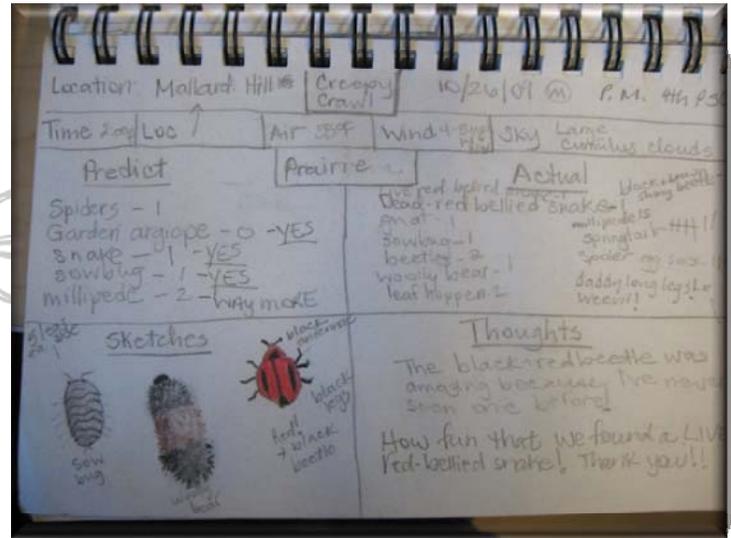
- Include your name, date, contact information (in case your journal is lost)
- Number each page
- Consider pages at the front or back for:
 - Contents/index list
 - Species lists or phenology lists
- Use same format on all pages...
 - Weather - if you have weather recording instruments...
 - Air temperature
 - Water temperature
 - Soil temperature
 - Wind speed and direction
 - Sky

On every page...

- Title
- Date, Day, Time
- Location

Other Thoughts

- Observe first, record second.
- Use your senses.
- Illustrate regularly with sketches, rubbings, specimens, maps, photos.
- Use colors.
- Be sure to label sketches.
- Count things.
- Journal daily, if you can.
- Go to the next page if one isn't enough.
- Return to the same place over and over.
- Let nature be your teacher.
- Look for uncommon beauty in common things.
- Using the journal brings improvement. You will be pleased.
- Be still, look for meanings. Ask questions.
- Wonder!



Compass to the Outdoor Classroom: All About Wonder

Specific Things You Can Do with a Nature Journal (Walker-Leslie; Stoddard)

1. Event Mapping (Naturalists might call it a discovery hike.)
 - a. Take a walk in nature.
 - Skills used: Observing, listening, critical thinking, mapping, problem solving, use of graphic organizers.
 - b. Prepare students or your learner by providing a model of an Event Map: It is really a graphic organizer that uses symbols and pictures to create a map of a walk taken outside. The map includes observations and discoveries important to the observer. An event map is really a record of two main things:
 - Where you went
 - What you saw (you can vary this with personal anecdotal comments)
 - c. Take notes in student field journals (create a rough draft in the field). Inside have students create a final draft using colored pencils, a key, etc. Add features you want them to learn about and use on a map.

Extend the Idea: Map the same place for three consecutive days.

- a. 1st Day: Map the route; pay attention to geographic features, distance, etc.
- b. 2nd Day: Make a new map for the same route or, using the map from the first day, add the events happening in nature. These events could be birds only, animals only, or a combination. For more advanced students/adults, include plants, invertebrates, weather, and more.
- c. 3rd Day: Create a map of the route with a partner; have partners combine skills and strategies for mapping into a partner map.

2. Seton Watching with a Nature Journal

Set up learners to do a traditional Seton Watch: *It is simply sitting alone*, quietly, no movement for 3 minutes at first. Then build this experience by increasing the amount of time. A practical goal would be to sit quietly observing for 30 minutes. During this time the observer can record observations in the nature journal.

- a. Combine a Seton Watch with a Sound or Color Map, or both. (See Sound and Color Map in **Top Ten Field Activities*** - (after bibliography, page 21))
- b. Teach children to use mathematical benchmarks and have them examine the place where the Seton Watch occurs by measuring things.
- c. Poetry with the Seton Watch: This is a powerful combination incorporating the written word in the form of poetry created about specific topics being observed in real time by the Seton Watcher.



Seton Watching...simply sitting alone and watching. Delightful!

Compass to the Outdoor Classroom: All About Wonder

- d. Partner or Trio Seton Watching: With specific guidelines even young children can be guided to quiet observations with their peers in the Seton Watch format. This can be followed by a writing activity.

3. Listening Skill Development

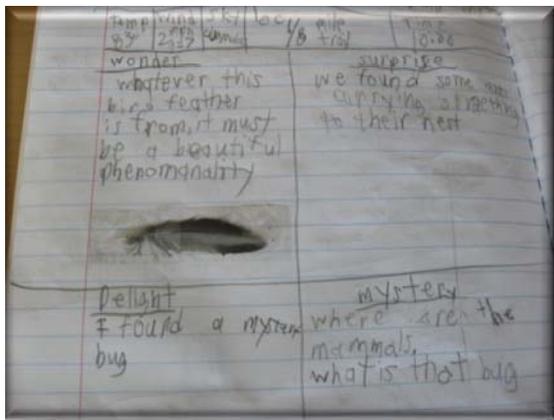
- Use the nature journal to develop listening skills: Invite learners to write while listening.
- Write while listening outside: What do you hear? Do this weekly on the same day at the same time, compare what is written, and draw conclusions about what is discovered.

4. Develop Sketching Skills

Use a nature journal to enhance or develop the skills of sketching and drawing.

Sketching/drawing significantly improves observation and critical thinking skills. Learning to sketch improves concentration and develops patience. A sketch can be a significant part of a scientific record and is a natural complement to any nature journal.

- a. Color mapping can teach color, value, and scale. (You may need your own introductory course. See: <http://www.goshen.edu/art/ed/draw.html>)
- b. Teach children and adults the valuable tool of sketches and drawings.
 - *Gesture sketch:*
 1. The pen or pencil always stays on the paper.
 2. While sketching, look for patterns and basic geometric shapes.
 3. A gesture sketch is done quickly.
 4. Invite your journalist to use color. Colored pencils can add shading and great interest. Consider color sketches on every journal page.
 - *Landscapes:*
 1. Look for the layers in the scene.
 2. There are always 3 views in a landscape scene:
 - The foreground (darkest part of landscape, more details here, bigger than the other two)
 - The middle ground
 - The background (the lightest and smallest of the backgrounds)
 - Lay all backgrounds in lightly at first; use shading to show direction and volume.



Learn from one another: Whether in a classroom or in a small group of journalers, begin sharing your discoveries with others by taking a **Journal Walk**. Have all students lay their journals on a table, push in the chairs, and take a walk around the room. One at a time, look at the nature journals of all the others. There are many related activities you will discover as you “**Journal Walk**” with your group.

Journal Walks - A Great Learning Extension

Compass to the Outdoor Classroom: All About Wonder

How Can a Nature Journal Benefit Both Children and Adults? The Nature Journal Is/Can ...

- ✓ Develop a sense of *wonder*, which increases motivation for learning.
- ✓ Flexible - adaptable for all curricular areas and every learning style.
- ✓ A true model for the science process.
- ✓ Able to capture conceptual understanding of big ideas.
- ✓ Reconnect the journal user with how the natural world *works*.
- ✓ Develops organizational skills.
- ✓ Enable active reflection and thinking.
- ✓ Relaxing, satisfying, and develops a nature connection for the user.
- ✓ A lifelong skill that can improve with use.
- ✓ A tool for extending learning and increasing enthusiasm - helps develop lifetime enjoyment of learning.
- ✓ A significant record - both scientific and reflective.
- ✓ A tool that can significantly improve writing skills.
- ✓ One of the best means of fostering critical thinking and problem solving skills. It builds the connection between thinking and writing.
- ✓ A significant tool for developing organizational skills.
- ✓ A means of communicating with your students and discovering what they are thinking.

Provide yourself and your students with an opportunity to follow in the footsteps of significant American historical figures by using a nature journal.

Lewis and Clark Perhaps the words of President Thomas Jefferson to Captain Meriwether Lewis (June 20, 1803) will inspire you and your students or children to consider the use of a nature journal as a way to guide you into a study of nature in school or at home:



**Nature journals
come with Presidential approval...**

Your observations are to be taken with great pains & accuracy, to be entered distinctly & intelligibly for others as well as yourself, to comprehend all the elements necessary, with the aid of the usual tables, to fix the latitude and longitude of the places at which they were taken, and are to be rendered to the war-office, for the purpose of having the calculations made concurrently by proper persons within the U.S. Several copies of these as well as of your other notes should be made at leisure times, & put into the care of the most trustworthy of your attendants, to guard, by multiplying them, against the accidental losses to which they will be exposed. A further guard would be that one of these copies be on the paper of the

birch, as less liable to injury from damp than common paper.

Reflect on your practice:

How could nature journals fit into your classroom?

Compass to the Outdoor Classroom: All About Wonder

The Outdoor Classroom: Phenology Centered Phenology = A Nature Portal for Teachers and Children



Phenology - the who, what, when,
where, why, and how

Phenology? What is it?

Phenology is the study of the *timing* of natural events, of natural *phenomena*. In more technical terms, phenology is the study of biological phenomena interacting with climate. Phenology should be used as the **primary tool** to make connections with nature: It can be a portal or entrance way to the largely unexplored wonders of the natural world. A developing a relationship with nature is made easier when students and adults are encouraged to notice the changes that occur regularly. In doing so the observer begins to discover the mystery and wonder that causes nature to be so worthy of watching.

A phenology study can be integrated with language arts, science, math, history, even health, making it a significant instructional tool for teachers that can yield real data collected by students. A study of the history of phenology will produce a wealth of information, increasing the educational value of this subject. Studying

phenology will greatly enhance the understanding of natural science of every learner. Equally important to any classroom teacher is the motivation and enthusiasm that a study of phenology will develop in students.

As you build connections with the “place” outside your classroom, incorporate a study of what is happening there. A phenology study is the “bridge” that can wire both teacher and student to the limitless source of study found in nature. Observing the occurrence of natural events will lead to the investigation of other events that were before unnoticed or never before considered. A phenology study creates a need for record keeping, which will support the use of a nature journal or science notebook.

A phenology study of the “place” around your school building will produce surprising benefits with little effort. The study of phenology may be the best way for a teacher or parents and children to begin to study a nearby natural place and then sustain that study for an extended time, perhaps years in duration. There are numerous compensations for the teacher or parent who initiates a study of the timing of the natural events in the place called school or home.

Compass to the Outdoor Classroom: All About Wonder

Some of the perks from phenology study include:

1. Bringing real numbers - data to study - into the classroom or your home.
2. Collecting other data - information on a wide range of nature events - that can be used as topics for:
 - a. Writing
 - b. Graphing of data
 - c. Graphic organizers
 - d. Venn diagrams
 - e. Instruction in critical thinking and problem solving
 - f. Authentic activity to apply to state education standards
3. Gaining new vocabulary
4. Providing opportunities for students/children to become better observers, more reflective
5. Incorporating authentic use of calendars
6. An unexpected benefit: The reassurance and peace of mind that come from observing the order and structure in nature.

Consider as evidence the words of the following authors:

- “I firmly believe that nature brings solace in all troubles.” - Anne Frank
- “There is something infinitely healing in the repeated refrains of nature - the assurance that dawn comes after night, and spring after the winter.” - Rachel Carson

How do I start?

Begin simply; pay attention to what is happening in nature at the time you are outside.



Use these steps to begin:

1. Go outside at the same time to the same place daily **or** on a regular basis.
2. Take a science notebook or field journal with you.
3. For each observation, record the day and date at the top of the page.

**Phenology - notice nature...it means “going with the flow.”
Your nose may get cold!**

Compass to the Outdoor Classroom: All About Wonder

It could look something like this:

Friday July 9, 2010

Location: The southwest corner of the school building. [You could develop a key to use for repeated things like place: (SW C-SB)]

Sarah noticed red cardinals singing in the maple.

Katie saw a patch of milkweed where there were two monarchs perching.

Ben saw a red-winged blackbird.

We all noticed numerous butterflies of different kinds.

It was 75 degrees F and clear.

Monday, August 2, 2010

Location: Adams Pond on the dock.

Using binoculars, watched some type of living thing come to the surface. Children thought it was fish. The binoculars showed the creatures to be salamanders.

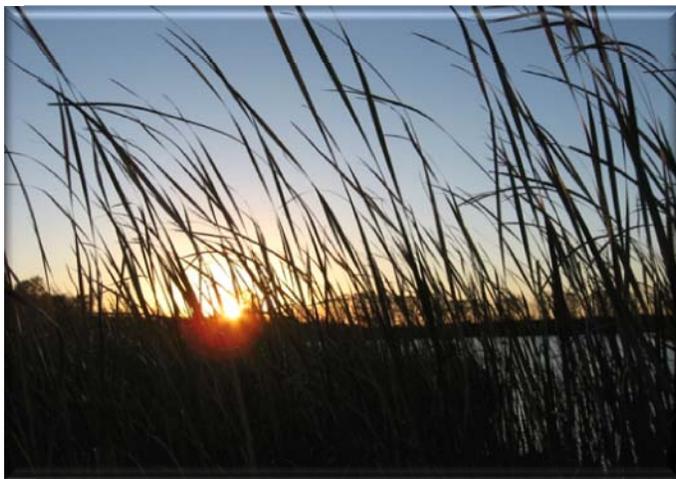
Observed: Green darner dragonflies, 6 blue-winged teal in flight.

79 degrees F, humid, partly cloudy, wind NW.

Each time you return to the inside classroom or your home, spend 5-10 minutes together talking about what you observed. After a few trips to the place you've chosen to observe, ideas will begin to come to mind:

1. Create a class chart/list of *firsts*.
2. Measure something at the place you observe – this may be as simple as a leaf or plant stem. Record the data on a visual display or chart so you can watch changes together.
3. Use collected data to develop graphs, discuss observable facts, draw conclusions.
4. Look for patterns, make predictions, compare data.
5. Use phenology records to help understand the place you are using as a classroom.
6. Phenology records create real data to be interpreted, documented, and written about.

Phenology is a valid, authentic way to begin to discover the way *in* to nature. Let it be your *compass*, your guide as you begin a journey that can last a lifetime, a journey into nature. It could become a fulfilling lifelong hobby for you and those you share it with.



Reflect on your practice:

Phenology is a rich treasure waiting for your exploration. What “first” can you discover in your “place” with your students? Make a prediction - then check to see if you are right!

Phenology: Your guide to how nature works

Compass to the Outdoor Classroom: All About Wonder

Use Naturalists as Teachers - Consider Becoming a Naturalist!

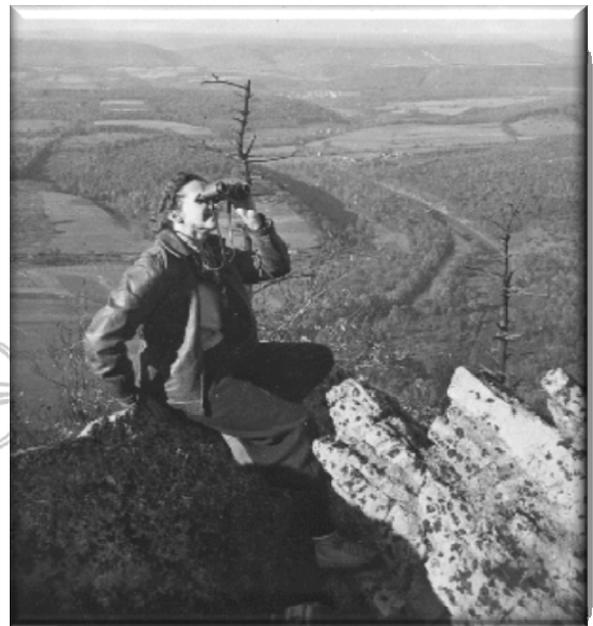
“I wanted to know the name of every stone and flower and insect and bird and beast. I wanted to know where it got its color, where it got its life - but there was no one to tell me.”

George Washington Carver

You could be the person who helps others begin a lifelong study of the wonders of the natural world. Rachel Carson declared wisely, “If a child is to keep alive his inborn sense of wonder, he needs the companionship of at least one adult who can share it, rediscovering with him the joy, excitement and mystery of the world we live in.” Yes, you can be that person. The **fourth** tool that can be your **compass guide** to the outdoor classroom comes from the vibrant, dynamic world of **naturalists** present and past. These individuals reach out to us today through their clear, exciting descriptions of nature, through their life model, and the energizing example of being in and participating in nature. Use naturalists to guide you as you seek a “way back into” nature with your students or children.

Here is a quick down-to-earth definition of a naturalist: *A person who studies nature.* However, for an educator and for parents, there is much more than just a fancy name involved with a study of naturalists and actually becoming a naturalist. A naturalist is:

- ✓ A reflective thinker who constantly analyzes information.
- ✓ A problem solver who uses clues to explain natural events.
- ✓ One who keeps records and is learning how to organize both numeric and written records.
- ✓ One who is respectful of nature, the life found there. This transfers to personal relationships.
- ✓ One who is inquisitive, curious - always asking questions. This transfers to all learning.
- ✓ One who is full of wonder. Nature provides anyone who will be observant with an endless source of amazement.
- ✓ Someone who learns to be still. To see more, sit still more. This skill is useful in many areas of life.
- ✓ One who is observant - learns to pay close attention to changes and differences.
- ✓ One who is patient - has learned to be still, to wait.
- ✓ One who is prepared.
- ✓ One who is delighted to share.



Rachel Carson (1907-1964)
Someone to learn from...

Compass to the Outdoor Classroom: All About Wonder

The writings and thoughts of naturalists are a rich treasure for teachers, students, and parents. They are absorbing reading with insights to nature and the world we live in and are well worth the time necessary to investigate them. Studying the writings of naturalists provides immediate connections for an integrated study of the outdoors and the outdoor classroom. Such a study is even better than it sounds, for this study will provide multiple applications for education and families who investigate the work of naturalists on their own.

Possibly the best book to begin a study of naturalists was written by Rachel Carson in 1956. It was not a book at the time, but rather a magazine article for parents called “Teach Your Child to Wonder.” Using Rachel Carson’s *The Sense of Wonder* as your starting point will provide clear direction.

Another catalyst for the study of naturalists could also come from reading the journals of Lewis and Clark. These journals of the expedition to explore the Louisiana Purchase beginning in 1803 are



Reading the introduction of Comstock’s *Handbook of Nature Study* provides valuable and surprising insight!

detailed accounts of a journey of discovery, mystery, wonder, adventure, and challenge. The journals of Lewis and Clark serve as models for teachers who wish to develop journaling and scientific skills of observation in students. They can be another springboard for ideas for instruction. Examples include an exploration of the spelling skills of these explorers, where students see the need for spelling skills. Another possible use of the journals of Lewis and Clark can be found in a study of their writing styles, a third in the scientific observations and descriptions made by the explorers.

A final suggestion for a study of naturalists comes in the form of reading biographies or books written by these careful nature observers. John Muir, Aldo Leopold, Anna Botsford Comstock, and Byrd Baylor are listed in the bibliography section. Explore the thinking of these individuals, who found something in nature worth sharing. You will be both surprised and delighted. Finally, for teachers and parents, read: *The Naturalist*, by Barry Lopez, a present day naturalist whose insights will enlighten you regarding what a naturalist is and does. As Lopez explains in this article, “Looking for a way back in” is a striking characteristic of the modern naturalist’s frame of mind.” Naturalists of the past and present do help us rediscover “a way back in.”

Reflect on your practice:

Devise a plan for including the four points of integrating an outdoor classroom into your classroom routine:

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TOP 10 FIELD ACTIVITIES FOR STUDENTS AND TEACHERS

Rank/Activity	Activity Details	Materials needed:	Tips for success:
<p>#1-<i>The Seton Watch</i> (You will want to repeat this Activity monthly)</p>	<p>Patterned after a nature observation technique of Ernest Thompson Seton. The objective of this activity is to sit-quietly watching until animals, birds and wildlife around the observer resume normal activity. Usually a person who is Seton Watching is surprised by something unexpected.</p>	<p>Student/Teacher field journals, pencils (sometimes colored pencils for sketching) One page: Title-<i>Seton Watch</i> (include the date and day)</p>	<p>An effective way of getting students placed is to walk them in a single file line with the teacher picking the spot for the student to sit. Goal: all students sit, with-out talking observing nature and journaling what is observed.</p>
<p>#2 <i>The Bio-Blitz</i> (Can repeat this Activity monthly)</p>	<p>This is a monthly or seasonal activity, but could be done weekly. A Bioblitz consists of the field leader and students walking a regular path in the outdoor classroom to observe and record: bird species, mammal species, plant life, land and aquatic invertebrates, and, in season retiles and amphibians. These observations should be recorded on a class Bioblitz record, and in student journals.</p>	<p>Student/Teacher field journals, pencils. One page: Title-<i>Bioblitz</i> (include the date and day)</p>	<p>Seton Watch quietness is necessary for this activity. The field leader and group walk slowly along the predetermined route, observing and recording. Aquatic and land invertebrates should be sampled from the same location.</p>
<p>#3-<i>Aquatic Labs</i> (Can repeat this Activity monthly-deep winter is least productive.)</p>	<p>If your outdoor classroom has a wetland, lake, or river this activity will provide students and teachers with a glimpse into the world of macro-invertebrates. Using</p>	<p>Student/Teacher field journals, pencils. (Label this one Aquatic Inverts.) Also: dip nets, plastic wash tubs, dichotomous keys, and a guide</p>	<p>Discuss and explain the use of the dichotomous key. Use a figure 8 motion to sweep water, high, medium, low-be careful to keep mud out of sample. Reverse the net in the tub to rinse out invertebrates. Before identifying-have students observe without talking. A current online version is available @ http://clean-water.uwex.edu/pubs/wav.htm Be careful to print clear copies-high quality</p>

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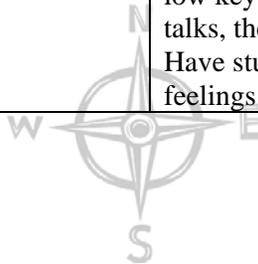
<p>Top Ten Field Activities continued...</p>	<p>dip nets, plastic wash tubs, dichotomous keys, a guide to aquatic invertebrates, students sample, identify and discover aquatic invertebrates.</p>	<p>to aquatic invertebrates.</p>	<p>copies aide greatly in identification.</p>
<p>#4 <i>Discovery Hikes</i></p>	<p>A Discovery Hike is just what the name implies: a hike to discovery what is happening in nature at the time. It is often best to have no set agenda-just walk to see what nature provides!</p>	<p>Student/Teacher field journals, pencils. Set up page with title, weather data box or bar. Be flexible, encourage students to look for surprises!</p>	<p>Prepare students before going into the outdoor classroom by asking them to predict what they might see. Build a list; compare this list with what was seen.</p>
<p>#5 <i>Layback</i></p>	<p>The Layback could be combined with a Discovery Hike or any of the other activities on this list-especially the Seton Watch. The Layback is best on a day when the ground is dry. When your students have become acclimated to sitting on the ground, invite them to layback on the ground!</p>	<p>Student/Teacher field journals, pencils. Try using student sketches to capture the shape and look of the sky.</p>	<p>This activity quickly becomes a favorite of most children once they are acclimated and used to sitting on the earth. When everyone is done ask students to fluff up the flattened area where they lay in an attempt to leave no trace you were there.</p>
<p>#6 <i>Seed Gathering/Restoration</i></p>	<p>If your outdoor classroom is a place where native seeds may be gathered in season you will find the response of students delightful. Pre teach briefly the types of seeds you want to gather in order that students do not gather invasive/non-native species. Keep the plant types being gathered to 2-4 each time. This assures ID success.</p>	<p>Student/Teacher field journals, pencils. Plastic bags for seed gathering (save and use again). ID/Plant guides to use inside for ID purposes, or use the real specimens.</p>	<p>This activity could be compared to a treasure hunt. Encourage students before going into the field to walk slowly. Set guidelines for staying with the group-give boundaries. You may wish to keep seeds of each species gathered separate/or if you will use them for a restoration, they may be all combined.</p>

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Top Ten Field Activities continued...			
#7 <i>Sound Mapping</i>	The Sound Map activity requires the development of patience, and an increasing level of listening skill. In this activity you your students down on the earth to listen to the sounds occurring. The object is to create a map of the type of sound, and it's location and distance from your position	Student/Teacher field journals, pencils.	On the journal page for the Sound Map have students place an X in the center of the page. Next place a compass rose in one corner and a blank map key in another. Discuss with students what they may use for symbols on the map key. Go out into the field-experiment with the development of your sound maps. This is also an excellent problem solving activity!
#8 <i>Windows</i> (add your ecosystem type after)	Windows is really an opportunity to study land invertebrates and introduce your students to the small world of land macro-invertebrates. It is called "windows" because the study method involves opening a "window" by gently pushing plant material on the earth aside to see bare earth and what is on it.	Student/Teacher field journals, pencils. A page entitled: Windows. Sketches and written descriptions followed by research on the invertebrate are all a part of this.	Prior to doing a "windows" activity, introduce your students to possible land macro invertebrates: millipede, centipede, sow bug (wood louse), springtails, spiders of your area, insects in season. Remind your students to "close the window" when done!
#9 <i>Study Stations</i>	Study Stations are designed to get your students to begin to look for <i>change in nature over time</i> . In your outdoor classroom select a place where students can <u>revisit over an extended time</u> -to observe and record the activity (plants, invertebrates, animals, birds, etc.) occurring at this place each time.	Student/Teacher field journals, pencils.	With your students discuss and develop a continuing process of recording the changes. This activity can include teaching data collection, graphing, and the use of graphic organizers and more.

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Top Ten Field Activities continued...			
#10 <i>Sketching</i>	Providing your students with skills in sketching is a significant tool in using the outdoor classroom. Sketching techniques to consider are: blind contour, modified contour, gesture sketch, diagrammatic sketch.	Student/Teacher field journals, pencils and a set of basic colored pencils.	Information-blind contour sketches (develop hand-eye coordination): http://www.alifetimeofcolor.com/main.taf?p=2.1.1.2 Gesture sketches: http://www.goshen.edu/art/ed/draw.html Begin using these basic sketching techniques early in the study of the outdoor classroom. Ernest Thompson Seton, naturalist, 1860-1946, once stated, "Nature journals should be embellished with diagrams, sketches or photographs which can help more fully to set forth the facts."
*Super Bonus! <i>No Talk in the Field Day</i>	This activity is exactly what the title suggests: no talking in the field.	Student/Teacher field journals, pencils	No talking deepens and extends student observations skills. New insights and discoveries occur. Students like the quiet. A way to help them be successful is to make a low key contest. Walking in a line-if someone talks, they go to the back. Have students write about discoveries and feelings in their field journals.



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