# Nature Journaling

**Grade:** K, 1, 3, 4
**Length:** 1-many hours, over several weeks if you want
**Big Ideas:** Observations and awareness
**Topic:** Nature observations, interacting with nature through art and writing

**Summary:** Students will use their nature journals to document what they see around them. They can use the journals to write, draw, or record observations about the natural world.

**Standards:**
Kindergarten Strand K.1: Weather Patterns
Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time. People measure these conditions to describe and record the weather to identify patterns over time. Weather scientists forecast severe weather so that communities can prepare for and respond to these events. Sunlight warms Earth's surface.

**Standard K.1.1:**
Obtain, evaluate, and communicate information about local, observable weather conditions to describe patterns over time. Emphasize the students' collection and sharing of data. Examples of data could include sunny, cloudy, windy, rainy, cold, or warm. (ESS2.D)

**Standard K.1.2**
Obtain, evaluate, and communicate information on the effect of forecasted weather patterns on human behavior. Examples could include how humans respond to local forecasts of typical and severe weather such as extreme heat, high winds, flash floods, thunderstorms, or snowstorms. (ESS3.B)

**Standard K.1.3**
Carry out an investigation using the five senses, to determine the effect of sunlight on different surfaces and materials. Examples could include measuring temperature, through touch or other methods, on natural and man-made materials in various locations throughout the day. (PS3.B)

Kindergarten Strand K.2: Living Things and Their Surroundings
Living things (plants and animals, including humans) depend on their surroundings to get what they need, including food, water, shelter, and a favorable temperature. The characteristics of surroundings influence where living things are naturally found. Plants and animals affect and respond to their surroundings.

**Standard K.2.3**
Obtain, evaluate, and communicate information about how living things (plants and animals, including humans) affect their surroundings to survive. Examples could include squirrels digging

in the ground to hide their food, plant roots breaking concrete, or humans building shelters. (ESS2.E)

First Grade Strand 1.1: Seasons and Space Patterns

Seasonal patterns of motion of the Sun, Moon, and stars can be observed, described, and predicted. These patterns may vary depending on the region, location, or time of year.

**Standard 1.1.2**

Obtain, evaluate, and communicate information about the patterns observed at different times of the year to relate the amount of daylight to the time of year. Emphasize the variation in daylight patterns at different times of the day and different times of the year. Examples could include varying locations and regions throughout the state, country, and world. (ESS1.B)

**Standard 1.1.3**

Design a device that measures the varying patterns of daylight. Define the problem by asking questions and gathering information, convey designs through sketches, drawings, or physical models, and compare and test designs. Examples could include sundials for telling the time or tracking the movement of shadows throughout the day. (ESS1.B, ETS1.A, ETS1.B, ETS1.C)

First Grade Strand 1.2: The Needs of Living Things and Their Offspring

Living things (plants and animals, including humans) depend on their surroundings to get what they need, including food, water, shelter, and a favorable temperature. Plants and animals have external features that allow them to survive in a variety of environments. Young plants and animals are similar but not exactly like their parents. In many kinds of animals, parents and offspring engage in behaviors that help the offspring to survive.

**Standard 1.2.1**

Plan and carry out an investigation to determine the effect of sunlight and water on plant growth. Emphasize investigations that test one variable at a time. (LS1.C)

Third Grade Strand 3.1: Weather and Climate Patterns

Weather is a minute-by-minute, day-by-day variation of the atmosphere's condition on a local scale. Scientists record patterns of weather across different times and areas so that they can make weather forecasts. Climate describes a range of an area's typical weather conditions and the extent to which those conditions vary over a long period of time. A variety of weather related hazards result from natural processes. While humans cannot eliminate natural hazards, they can take steps to reduce their impact.

**Standard 3.1.1**

Analyze and interpret data to reveal patterns that indicate typical weather conditions expected during a particular season. Emphasize students gathering data in a variety of ways and representing data in tables and graphs. Examples of data could include temperature, precipitation, or wind speed. (ESS2.D)

Fourth Grade Strand 4.1: Organisms Functioning in Their Environment

Through the study of organisms, inferences can be made about environments both past and present. Plants and animals have both internal and external structures that serve various functions for growth, survival, behavior, and reproduction. Animals use different sense receptors specialized for particular kinds of information to understand and respond to their environment. Some kinds of plants and animals that once lived on Earth can no longer be found. However, fossils from these organisms provide evidence about the types of organisms that lived long ago and the nature of their environments. Additionally, the presence and location of certain fossil types indicate changes that have occurred in environments over time.

**Standard 4.1.1**

Construct an explanation from evidence that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. Emphasize how structures support an organism's survival in its environment and how internal and external structures of plants and animals vary within the same and across multiple Utah environments. Examples of structures could include thorns on a stem to prevent predation or gills on a fish to allow it to breathe underwater. (LS1.A)

Fourth Grade Strand 4.4: Observable Patterns in the Sky

The Sun is a star that appears larger and brighter than other stars because it is closer to Earth. The rotation of Earth on its axis and orbit of Earth around the Sun cause observable patterns. These include day and night; daily changes in the length and direction of shadows; and different positions of the Sun and stars at different times of the day, month, and year.

**Standard 4.4.2**

Analyze and interpret data of observable patterns to show that Earth rotates on its axis and revolves around the Sun. Emphasize patterns that provide evidence of Earth's rotation and orbits around the Sun. Examples of patterns could include day and night, daily changes in length and direction of shadows, and seasonal appearance of some stars in the night sky. Earth's seasons and its connection to the tilt of Earth's axis will be taught in Grades 6 through 8. (ESS1.B)

**Essential Questions:**

- What is a nature journal?
- Why is keeping a nature journal important?

**Enduring Understandings:**

- You can create a nature journal simply by making observations about the natural world around you.
- A nature journal can be anything you want it to be.
- This is your journal, and you get to decide what goes in it.

**Objectives:**

**Students will…**

- Design and decorate the covers of their own nature journals.
- Draw and write down their observations of the natural world.

**Materials:**

- Blank paper (enough for each student to have 3-5 sheets)
- Construction paper (enough for each student to have one sheet)
- Crayons/colored pencils
- Old magazines or calendars with pictures of nature and animals and/or plants in them
- Field guides
- Refer to the listed materials for each individual activity for additional materials.

**Background Information:**

Keeping a nature journal can be an important aspect of creating an ongoing relationship with nature. Nature journals are also useful tools in learning to make and record observations about the natural world around you. Many people keep journals because they want to, not because it is part of a job or a requirement for school that goes away after graduation. It would be ideal to model good journaling by keeping and using your own journal along with your students.

Also, be mindful and try to refrain from using phrases like, "I can't draw," or "I'm not a writer." These are phrases that give kids who already are wary of art or writing an excuse to refuse to participate. We don't all draw or write the same, but it is important to try new things and to develop new skills.

Creating the Nature Journals: For each journal you will need 1 sheet of construction paper and 5-7 (or more if you want) sheets of blank printer paper. Fold the construction paper hamburger style (horizontally) and fold the sheets of printer paper in between the construction paper. Staple down the spine of the journal with the pages open (makes opening and using the journal easier). Don't staple down the spine while the journal is closed.

**Procedure:**

1. Give each student a journal to decorate. Provide students with scissors, glue, old magazines, and coloring materials. Tell them they may cut out whatever pictures inspire them and draw whatever they want on the back and front of their journals. Make sure explain to them not to draw inside their journals yet. Make sure they put their names on the outside of their journal.
2. Go outside! Make sure everyone has at least one pencil (extra coloring materials optional).
    a. Before you have everyone go their own way and find what they can find, take some time together. Have them close their eyes.
        i. Ask them what they can hear and have a few volunteers share.
        ii. Have them open their eyes and ask them what colors they see.
        iii. Have them breathe deeply and ask if they can smell anything.
        iv. Have them reach down and touch the ground-what does it feel like?

v. Ask them about the weather. Is it sunny or cloudy? Is it warm or cold? Tell them that all the things they have noticed are observations and that is what they will be doing with their time outside. Making observations.

b. Tell them that all the things they have noticed are observations and that is what they will be doing with their time outside. Making observations.

3. Next explain to them a little about recording their observations because that's the whole purpose of the journals. This can be done any way they want. If they want to practice writing they can use words to describe the things they've observed (e.g. "I saw a bird flying" or "the green grass is soft" etc.). They can also use drawings or pictures to record what they observed. They can draw what they see, hear, smell, and feel. Graphs are also acceptable. Maybe they want to graphs the number of different colors of plants they see. Make sure they know there is no right or wrong way to do this. Encourage them to try new things and different ways of recording.
4. Be sure to give students some time to explore freely as well as supplementing their time with these more structured activities.
5. Try to get out and journal once a week or once every couple weeks, so that the students can observe changes to the environment over time.
6. If you have access to field guides, you could use them to help the students identify the plants and animals they are seeing, and add those to their observations. The following are some examples of activities you can do with your class. These are just some ideas. Be creative and come up with fun ways to get your students outdoors and observing nature.

**Leaf and bark rubbings**:
Materials: crayons with paper removed, pencils, tree/leaves.

If you have access to trees this is an excellent way to make great observations and record them in a fun way. Make sure each student has a pencil or a crayon with the paper removed. Take them to a tree and have them find a leaf from that tree (preferably one that has already fallen to the ground). If there aren't any on the ground, select a few from the tree for them to pass around and use. Have them place the leaf under one of their sheets of paper in their journal. They then rub the pencil or crayon back and forth over where the leaf is under the paper. This should start to reveal the shape and veins of the leaf. You can also have them put a sheet of their journal paper up to a tree trunk and have them do the same thing to see the pattern of the wood. Ideally you can try this with many different leaves and trees to observe differences and similarities. Explore the phenomenon of the veins in the leaves. Discuss with students why they think leaves look that way. What importance do they have or purpose do they serve? Do the veins in a leaf remind you of anything? What do veins in humans do? So what do you think these veins in the plants do? An example of an indoor version of this activity can be found below.

**Observe a Plant/growth experiment and observation**

Materials: Something to write with, indoor or outdoor plants (really good to do if students are growing plants in class).

This is an activity you will want to do over many sessions. If you are doing this outside, start in early spring when things are just starting to grow. If you are doing it indoors, start with plants that are just beginning to grow. The goal is to have students make as many observations as they can about the plant in each session. These can be qualitative and quantitative. They could observe the color of the plant or measure its size. They should come back one a week and see if there have been any changes in their plant. They can document this as drawings or writing things down. A really great way to cover the 1.2.1 first grade standard with this activity, is grow plants in your classroom and try putting them in different settings. Keep some in low sunlight and some in a sunny spot. Water some of them really well and water some of them very little. Do these things make a difference? Have them make graphs in their nature journals to show differences and try to determine what conditions are the most ideal for their plants.

**Weather observations (Grades K-1)**

Materials: Something to write with, Something long like a ruler or an unsharpened pencil

There are a lot of really great observations students can make about the weather. Each time you journal, have them record what the weather is like through drawings or simply writing down the temperature and conditions. Rain or shine! As they go through their journals through the year, have them note how the weather changes with the seasons. Why do they think that happens? Does the weather affect us and other living things in nature? For example, do we change our behavior when the weather changes? Have them record in their journals what they wear on the days they are journaling and see whether they correlate with the kind of weather outside. Have students record what they observe about other living things when the weather is different. Does the weather change the behavior of other living things? (For example, do they observe plants or insects in the winter? Do plants or animals change in the fall or winter? Etc.).

Have students do shadow tracking to record the movement of the sun. Have students pick a spot outdoors that they can remember. They will return to that spot throughout the day. Have them pick a blank page in their journal and draw a dot in the middle of the page. They should place their pencil or ruler or another long object on that middle dot. Have students draw a line where the shadow is and write the time on that line. Repeat this process throughout the day (make sure students are close to where they were the first time). Has the shadow moved or changed in other ways? Why?

As an experiment for Kindergarten standard K.1.3, spend several different journaling sessions exploring the effect of the weather on different surfaces (natural and man-made). What happens to them as the weather changes? Are some places warmer and others cooler? (i.e. blacktop versus tree bark, etc). Have them record these observations in their journals.

**Weather Observations (Grade 3-4)**
Materials: Something to write and make colors with, weather measuring tools such as thermometers, wind vanes, anemometer (measures wind speed), etc. (Here's a link to a simple anemometer that students can make in class https://www.youtube.com/watch?v=Af0LB3abBsk)

Each day students go out to journal, have them record some quantitative data about the weather. An easy one is temperature. Over the course of the year students can take their temperature recordings and graph them however they want. How does that graph change over a couple of weeks, months, the year, etc. The same can be done with wind speeds, directions, precipitation, etc.

Have students draw clouds they see, if any, when they journal. Are there differences in the kinds of clouds they see? Do those differences coincide with differences in the weather?

Make a sundial as a class and have students measure the movement of the sun through the sky. Why does it change? Why does the sun move through the sky and what does that have to do with the movements of the earth? (Here's a link to a silly, fun video that goes into how sundials work and how to make your own, even from a human!
https://www.youtube.com/watch?v=SeSexM-wVzA)

**Color matching**:
Materials: Crayons or colored pencils.

Have each student select a color of crayon or colored pencil. Explain to them that they should take this color around the outdoor space and try to find something that matches that color. The color doesn't have to match exactly but it should be close. One they have found something, have them write what they found or draw it with their color of crayon or colored pencil. When they have completed one color they may choose a new color and try again. Ask students why they think color is important in nature? Did they find anything that had a color that might help it survive? Why or why not?

**Sound maps**:
Materials: writing utensils

Have the students pick one spot to sit down. In their journal on a blank page have them put a small X in the middle of the page to represent where they are sitting. Have them listen to all the sounds around them. This can be any sound. Wind, birds, other children, cars, a dog, etc. Have them write, or draw something to represent the sound they hear. This can be a picture of the thing they think the sound comes from or a word to describe how it sounds. This could even be a color that they think represents the sound. Have them try to draw or write around the X where they think the sound is coming from. Discuss sounds in nature. What kind of

sounds did they hear? Are they all important to the world around them? Why? Do all living things make sounds? Yes, in one way or another. Do all living things vocalize? The ones that do, what are the vocalizations for? How do they help the living thing survive?

**ABC walk** (can be done alone or in pairs):
Materials: Hat, basket, or bowl with pieces of paper with the letters of the alphabet written on them (optional).
This is a good activity if you plan to make multiple excursions with your nature journals, which we encourage. Each time you go outside, choose a letter of the alphabet and let students know which letter you chose. You also could make it more interactive and have a bowl or basket with letters inside and have them take turns drawing out a letter. As they make their observations, instruct them to be looking for things that begin with that letter of the alphabet. Have them draw the things that they find in their nature journal (even if it's not something natural). For example, if you choose the letter "B" they could see a brown leaf, a bug, a bee, a building, etc. Have a different letter for each outing. This can be done indoors or outdoors. If done indoors and you have access, provide some items that students might find outside (e.g. grass, leaves, rocks, etc.). Place these around the classroom and see if students can find them. In this case, invite students to find natural items in the classroom.

Discuss with students how the things they've found interact with each other, especially if they are natural and non-natural things. How does nature interact with buildings or sidewalks? Do we as humans have an impact on the natural world around us? Does the natural world impact us? What can we do to have positive impacts on the natural world around us?

**Can you find it?** (Modified from *Science Adventures)*:
Materials: 8 to 10 index cards with adjectives written on them

Pre-make 8 to10 index cards with adjectives on them to describe objects they might find. For example, you might write the word "round" on one card. Have students explore the nature space and in pairs try to find things that they think are round. Try to accept all things they find and try to determine a way the object fits the description. Have them draw or write about the things that they found in their nature journals and help them write the word describing what they found. Have students consider the words they were asked to find. Are these things (shape, color, texture, etc.) important to things in the natural world? Why or why not? What are some of the ways these things could help living things survive? (For example if one of the words is soft, and the students saw a bird flying with soft feathers, how might that help the bird survive?)

**Finding opposites**:
Materials: One cardboard egg carton for each student. You can also do one egg carton for every two or three students if you would like them to work in pairs or small groups.

Small groups might be best for this activity as it might be hard for everyone to find what you are asking them to find. Have students bring their journals outside but set them aside for the

moment. They will record in them at the end. Explain that there are opposites all around them and everywhere in the natural world. Some things are soft while others are hard. Some things are smooth while others are rough. Some things are skinny while others are round. Give them one set of these opposites at a time to try to find in their outdoor space. Be lenient as whether something is soft or hard can be fairly relative in nature. Once they have found their items, have them place the opposites next to each other in the egg carton (each taking up one space in each row). This way they can easily observe the differences in the things they found. Go through several different examples of opposites so that their cartons are full or almost full. Have students bring their cartons over to where their journals are and record what they found and some things they noticed about opposites.

**Indoor Activities:**

For teachers who do not have easy access to an outdoor space, here are a few suggestions for activities to do indoors to help students learn about nature and making observations.

**How observant are you?**:
Materials: 6 to 8 items from outside, sheet/blanket

Have a table in the classroom that is empty except for 6 to 8 items you have brought in from outside (e.g. rocks, sticks, leaves, a crabapple, etc.). Have these things on the table for a portion of the class where the class can walk by and see them. Be sure to tell the students not to touch the items or move them. Late, while the class is out, cover the table with a sheet or blanket. When the class comes back in, have them take out their nature journals and write or draw the items that were on the table that they remember. Afterwards, remove the sheet and let students gather around the table to see what is there. Ask them what were some of the things almost all of them remembered or forgot. What things stood out?

**What do your senses sense?** (Modified from *Science Adventures*.):
Materials: paper bags, objects that could be found outside (e.g. a rock, a feather, a leaf, seeds, etc.) you will want enough of these to provide each group of 4 to 5 students with one.

Break students into small groups (4 to 5 students). Provide each group with a brown paper bag with one item in it that could be found outside (e.g. rock, stick, feather, leaf, small apple, shell, a seed). Instruct students to record their observations throughout this activity in their nature journals. Have each student take turns holding each bag with the top closed. Is it heavy or light? Have students take turns shaking the bag gently with the top closed. What do they hear? Have each student carefully open the top of the bag but not look inside. Instruct them to sniff inside the bag. Do they smell anything? Have them each take turns reaching inside the bag and gently feeling what is inside without looking at it. What does it feel like? Last have them take the item out of the bag. Was it what they thought it was? Have them draw the object in their

nature journals. If you have time you can have them swap bags with another group or you can have each group try another bag at another time.

**Leaf Rubbings**:
Materials: Leaves pre-collected from a park or your yard, pencils or crayons with paper removed

If you have access to leaves in a park or in your yard, collect several different shaped leaves to bring into the class. Ideally you would have at least one per student or less if you want them to do this activity in groups and practice sharing. In groups or individually, have students place a leaf under one of the pages in their nature journal. Provide them with a pencil or crayon with the paper removed and instruct them to rub their writing tool back and forth over the paper where the leaf is. Have them observe the textures. Give them a chance to try a few different leaves.

**Citations**:
Rockwell, Robert E. et al. *Science Adventures: Nature Activities for Young Children*. Gryphon House, Inc, 200

Sherwood, E., & Williams, R. A. (2008). *Science Adventures: Nature Activities for Young Children*. Lewisville, NC: Gryphon House, Inc.