



Arts for Outdoor School

A Guide for Including Art and Creative Writing in Outdoor Schools

October 2018, Version 1.0

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WITH FUNDING FROM GRAY FAMILY FOUNDATION



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PURPOSE AND AUDIENCE

This publication is intended to help Outdoor School directors, field instructors, school districts, school teachers, and other outdoor or environmental education decision-makers consider why they might expand their curricula to include art and creative writing instruction more prominently and how it can be done to meet their specific needs.

AUTHOR

About Willamette Partnership

Willamette Partnership is building a future in which people understand and value the benefits nature provides. We are an environmental nonprofit, based in Portland, Oregon, that is working across the West to increase the pace, scope, and effectiveness of restoration and conservation for the benefit of nature and people. Our vision is a world in which people create resilient ecosystems, healthy communities, and vibrant economies by investing in nature.

To learn more about Willamette Partnership, visit www.willamettepartnership.org.

About Honoring Our Rivers

Honoring Our Rivers is a project of Willamette Partnership. Its mission is to nurture the next generation of conservation and civic leaders by engaging the creative capacities of young people. We do this by publishing student works of creative writing and visual art inspired by rivers and watersheds in an annual anthology publication, through public student readings and gallery exhibitions, and through professional development for outdoor and environmental education educators.

To learn more about Honoring Our Rivers, visit www.honoringourrivers.org.

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ACKNOWLEDGMENT

The contents of this guidebook draw from Willamette Partnership's experience working with two Outdoor Schools in Oregon to expand their curricula to include more visual and literary art activities, thanks to funding from the **Gray Family Foundation**.

We'd like to thank **Charlie Anderson**, Director of Camp Tamarack Outdoor School, and **Jen Grube**, Director of Philomath Outdoors School, for their participation in this grant. Our success wouldn't have been possible without them.

Significant contributions to this guide were made by Oregon-based, multidisciplinary artist and educator **Brandi Kruse**. Kruse is a trained and practiced educator in both English language arts and art education. With a unique set of perspectives and skills, she develops curriculum for students from middle school to university, summer camps to college campuses and teaches art through a critical literacy perspective with a foundation in social justice education. Kruse's creative process begins with photography and language and manifests itself in prints, collage and multimedia installations. She is the co-founder of KC, a writers' collective publishing poetry zines since 2013; and in 2015, she produced an artist publication called Impossible Paper Architecture. Her work has shown locally and abroad, and she is the recipient of residencies at Caldera Arts Center in Sisters, OR (2017) and The Städelschule in Frankfurt, Germany (2015). brandikruse.com | Instagram @brandikruse

The contents of this guide also include insight collected from interviews with the following people:

- **Jen Grube**, Philomath Outdoor School, Director
- **Anton Grube**, Philomath Outdoor School, Assistant Director
- **Charlie Anderson**, Camp Tamarack Outdoor School, Director
- **Lauren Rodgers**, Camp Tamarack Outdoor School, Assistant Director
- **Catherine Alexander**, Straub Environmental Center, Director
- **Jennifer Starkey**, Columbia Slough Watershed Council, Education Coordinator (previously a program leader at Multnomah Education Service District Outdoor School)
- **Michelle Emmons**, Middle Fork Willamette Watershed Council, Educator

Finally, we would like to acknowledge two existing resources that we drew on throughout the process of developing art and creative writing activities for Outdoor School and this guidebook. They offer lesson plans that are accessible online:

- ***Opening the World Through Nature Journaling*** curriculum by John Muir Laws (johnmuirlaws.com).
- **BEETLES**, a program of the Lawrence Hall of Science of the University of California at Berkeley (beetlesproject.org).
- ***Drawing with Children***, a book for art instruction, by Mona Brookes (monart.com).



**“I see no more than you,
but I have trained myself to notice what I see.”
–Sherlock Holmes**

I. A CASE FOR INCLUSION

The arts, in its various mediums, can be a powerful tool for helping students practice science skills and become fascinated with the natural world—arguably two of the most important goals of most outdoor environmental education programs. But, they bring much more value than those two attributes alone. Not only do they help accommodate the diversity of learning styles that exist, but they are uniquely positioned to transform the way people think about the environment and humanity’s relationship with nature because of their emotional and experiential power.

Contrary to popular belief, the scientist and the artist do have a lot in common when investigating the natural world. They both must train their eyes to notice the details and subtle differences of the subject they’re studying. They also both record data, be it measurements, sketches, or descriptive language. And, they both use similar processing skills: asking questions, observing, seeing patterns, and constructing meaning. These skills are precisely why students can demonstrate required learning standards through many visual and literary art activities.

We all have different learning styles. The arts provide an additional lens for students to access environmental science concepts and build confidence in their ability to comprehend and convey science topics, particularly for English-language learners.

Also, these creative, sensory-provoking activities can help students get excited about the natural world. They are often fun, hands-on, and engaging. And isn’t that ultimately the goal of outdoor environmental education programs for kids? To not only provide knowledge content but to make a lasting impression that sparks curiosity, admiration and fascination in the natural world? If so, then the arts have an important role to play.

Finally, it is more important than ever for our environmental leaders to be creative thinkers given today’s seemingly insurmountable challenges—ocean acidification, sea-level rise, more frequent catastrophic natural disasters, species extinction, and natural resource scarcity, to name a few. When we practice activities that require creative thinking (also, divergent thinking), like with the arts, we train the brain to make bigger leaps in our thinking.

In review, the arts

- Are uniquely positioned to change human behavior and the perception of our interdependent relationship with nature because of their emotional and experiential power.
- Help students practice science skills (such as observing details, recording data, asking questions, and drawing hypotheses) and, therefore, can demonstrate learning required by state standards.
- Make environmental science concepts more accessible for certain students, especially English-language learners.
- Engage students in a fun, hands-on way that can spark long-lasting fascination with the natural world.
- Illicit creative thinking in the brain, which is a critical skill for innovating solutions to complex environmental problems.

In this guidebook, we cover how Outdoor School providers, educators, and other environmental education decision-makers can start taking steps to integrate more visual and literary art activities in their curriculum for a richer, more inclusive Outdoor School experience.



“We can’t solve problems by using the same kind of thinking we used when we created them.”

–Albert Einstein

II. TERMS

ART, in the context of this guidebook, includes visual, literary, and performing arts—from painting and creating sculptures to writing poems and dance.

CREATIVE WRITING, a medium of the arts, is any writing that goes outside the bounds of normal professional, journalistic, academic, or technical forms of literature, typically identified by an emphasis on narrative craft, character development, and the use of literary devices.

OUTDOOR SCHOOL is a field science program in Oregon that immerses fifth and sixth graders in the natural world as they learn about soil, water, plants, fire, and animals. For many students, it can be a first, up-close and personal encounter with nature or a newfound understanding of something they've seen their whole lives.



Earth art inspired by the process of decomposition by students at Outdoor School. / Camp Tamarack Outdoor School

III. BARRIERS TO INCLUDING THE ARTS IN OUTDOOR SCHOOL

The following are obstacles to including the arts in Outdoor School (ODS) and other outdoor environmental education programs communicated by educators in the field. Many of these barriers reinforce defeating beliefs (displayed in bold type) about the ability of educators and decision-makers to provide quality art and creative writing lessons. We address solutions to these barriers here and in Section V.

RESOURCES

“I have to spend a lot of money and have fancy facilities to incorporate art into ODS.”

The arts are typically one of the first educational strands to feel the effects of budget cuts to school districts, limiting the materials, facilities and staff time available to execute an arts-integrated curriculum well. As such, the availability of resources is a perceived barrier for many educators who don't have the budgets to contract outside artists or purchase pricey art materials.

However, it costs little to nothing to take a group of students outdoors and have them write a poem inspired by nature or to have them sketch a natural science illustration with colored pencils or to create sculptures and patterns from materials found in nature (i.e., leaves, pinecones, sticks, etc.). Simple art projects invite spontaneity, creativity and freedom, and often that is more fun!

They also help minimize messes and the time and space needed to set-up and clean-up more involved art projects, particularly for educators who are constantly teaching at new sites, literally on the move, in climates with frequent rain, or working with students with disabilities. The experience of including even simple art projects will engage students and make room for new discoveries within themselves and the curriculum.

Sometimes, not knowing where to look for existing resources, such as lesson plans and art- or writing-instruction guides, can also be a barrier. We have accumulated some of those resources in Section VII.

Finally, in Oregon, with the passage of Measure 99—a multi-million-dollar fund to provide access to Outdoor School for all fifth and sixth graders in the state—most ODS have the opportunity to receive the materials, contractors and other resources they need for their programs if they include them in their budgets when applying for funding to school districts or Educational Service Districts. We encourage you to include these line items in your next cycle of budget funding.

TIME FOR ART INSTRUCTION

“I don't have the time!”

Despite the Outdoor School for All Fund available in Oregon to help lengthen the duration of ODS programs—and therefore, extend the time available for new lessons and activities related to the arts—dedicating sufficient time for arts instruction is still a valid barrier. Some culturally responsive ODS may

choose to opt out of extending the length of their programs to accommodate the families they serve who don't want to be separated from their kids overnight or a full week. For newer ODS who want to receive funding, there is pressure to prove they are delivering scientifically-defensible content aligned with required learning standards, which often leaves the arts on the sidelines. And for long-standing ODS, there is less flexibility or motivation to change their programs because they have been fine-tuned and run in the same tradition for decades.

Also, planning and instructing art and creative writing activities can require a lot of time to effectively improve student skills, particularly as kids growing up in this digital era lose dexterity in their hand muscles (less handwriting, more typing) and have less stimulation to their imaginations (more screenplay, less make-believe play).

All things considered, 15-minutes of nature journaling or poetry writing is better than nothing because it stimulates creative thinking and engages students in the reflection of their connection to the outdoor world. And, if your ODS is considering extending the duration of its program (i.e., from half a week to a full week), then there is an opportunity to carve out more time to dedicate to the arts. We address options for making more time and how to help build a case for their inclusion in Section V.



"There are programs that are just starting out, and I think when you're just starting out in this current educational climate you feel compelled or the pressure of making sure you're really covering core science concepts, and that they're aligned with content standards. There is this pressure to either receive funding or to create validity in your program to really make sure you're addressing that first. And so I think that's where programs feel that we really need to make sure the science is covered. And sometimes in doing that we forgot that you can weave in some of the other things that lend to a great, quality science lesson for a 6th grader."

--Jen "Peri" Grube, Director of Philomath Outdoor School

BUY-IN FROM TEACHERS AND DECISION-MAKERS: MAKING THE CASE FOR ARTS

"The arts are nice and all, but they don't help students practice science or they don't 'check the box' for required learning standards."

Buy-in from leadership is an essential ingredient for successful integration of the arts in ODS. If decision-makers do not value the role arts can play in their programs, then there is less likely to be sufficient time and resources spent on the planning and execution of artistic activities; and the efforts and enthusiasm of capable, interested instructors will be undermined. For those on the fence about making big changes in programming to include more arts, there are baby steps that can be taken to test whether the juice is worth the squeeze (See Section V).

Sometimes, to earn that buy-in from leadership, a case must be made about how the arts can help deliver science and meet required learning standards. At a glance, an instructor from a hard-science background may not see how an illustration or a poem is reinforcing science skills. Next time, ask them to take a closer look at what the art or creative writing lesson is asking the students to do. Is it asking students to make observations? Pay attention to detail? Ask questions? Demonstrate understanding and support arguments with evidence from the natural world? Construct arguments or "hypothesis"? How about "record data" in



“The practice of science is about teaching kids how to make observations, which is noticing details in nature. We teach kids how to have discussions and think like scientists, which is asking questions and being curious. So when kids learn art and creative writing, it fits really well into our model because, ultimately, what we feel like the arts and the creative writing does is it continues getting kids practicing science.”

-- Lauren “Otter” Rogers, Assistant director of Camp Tamarack Outdoor School

the form of detailed descriptions or illustration? Often the objectives of field instructors in a science lesson are similar to those of an art or writing instructor’s lesson.

Other times, science skills, such as those mentioned above, will not necessarily be demonstrated in the act of doing the art, but scientific facts are taught and absorbed through the context of the activity. For example, if students are dyeing textiles with indigo, they may be learning that indigo comes from a plant and that there is a relationship between the dye and oxygen because the color changes when it oxidizes. Also, existing research continues to demonstrate that hands-on learning, such as drawing, is more effective at helping students retain information than by listening to information alone.

For these reasons, many art and creative writing activities can demonstrate required learning standards and help “check the box” for school teachers and others; it’s simply a matter of pulling apart the lesson and identifying the science skills being practiced as we have above. (Also, see Appendix A for a guide on aligning Next Generation Science Standards and Common Core with natural science illustration by grade level).

Finally, there may be a historical belief that Outdoor School is science only, but today many ODS are waking up to the diversity of learning styles that exist by embracing multiple approaches—including the arts—to piquing the curiosity and interests of students in the natural world. There is merit in the act of creating art and writing inspired by nature for the sake of fun, diversity in learning styles and the practice of creative or divergent thinking, which we discuss in the introduction (See Section I). Outdoor Schools have a unique opportunity to fill this gap in our education system for young people, most of whom may not have access to substantive arts instruction at their school or at home.



“Each student is different obviously, and so they connect to the outdoor world differently each of them. Some of them will connect from a science perspective, but many of them are going to connect much deeper and have different meaning if the arts or creative writing or some of the different pieces can be pulled in and incorporated. And that gives them a connection that they may not have had if it was science only. And that’s ultimately, hopefully, what we’re providing the students, a desire to leave Outdoor School and continue that education or that connection to the world in which we live.”

--Anton “Germ” Grube, Assistant director of Philomath Outdoor School

ART INSTRUCTION CAPABILITIES ON STAFF

“I have to be an artist to create or teach art and creative writing.”

Understandably, if we grow up with the belief that we are “bad” at art or creative writing than we have a fear

or disinterest in doing them as adults as well as a lack of confidence and a discomfort in our ability to teach them. However, anyone who is trained can learn to draw or write or perform—even adults later in life. Given a nonthreatening environment with enough structure and creativity, anyone can have fun doing art.

Initially, focusing on the process and not the outcome is key. Students thrive in nonjudgmental environments where their artistic work is not critiqued as “good” or “bad,” and where students can learn to appreciate the differences in each other’s work rather than making comparisons. This allows for more emphasis on the creative process and less on the validation of artistic success.

For drawing in particular, educators can help students overcome any overwhelming feelings of interpreting complex visual data if they are presented with a “visual alphabet” that trains them to see general shapes. This will lead to more realistic representations of the subjects drawn. (See Appendix C for an example of a visual alphabet from Jacob O’Brien and Annie Pomeranz. Also, “Drawing with Children” by Mona Brookes is a useful resource; her website includes lesson plans and curricula for art instruction: monart.com.)

To further help educators overcome their fears of teaching art, just think back to when you were a child and you made art because you let yourself play, be free and have fun with materials. You can still create. To teach art is to suggest to others that they should play with materials. There are a multitude of art activities that are loose and intuitive and require little to no formal instruction.

That being said, we recognize that a science teacher should not be expected to teach art just as an art teacher should not be expected to teach science. Doing so is not setting up the teacher or the students for success. It would be like asking a math teacher to go teach the flute. For this reason, if an ODS is genuinely interested in incorporating technical art or creative writing instruction, and no one on staff has these expertise, we highly recommend collaborating with local artists and authors from the community (See Section V).



“[Students] can discover a lot about the natural world and ask questions that would lead them down a path of scientific discovery just through the fact that they’re collecting samples or they’re drawing things. And they don’t to know everything about it right away. But it could ignite that spark that allows them to want to learn more.”

--Jen “Peri” Grube, Director of Philomath Outdoor School

IV. WHAT COMES FIRST: ART OR SCIENCE?

When it comes to including the arts in ODS, it often feels like a choice has to be made between either having primarily a science lesson with the arts for enrichment or having primarily an art lesson with science facts for enrichment. We suggest bringing *both* approaches to the table and not skimping on either.

The advantage of leading with science first is that more time can be spent delivering important knowledge content that students are required to learn. This assures that an ODS is meeting the expectations of their funders as well as school teachers. The add-on art or creative writing activity can be a fun way to engage students in reinforcing the facts they've just learned. This is the more common approach to integrating the arts into environmental programs. Students are used to drawing something to illustrate their learning rather than for the sake of creating.

The beauty of leading with art and creative writing techniques is that a) it allows for freedom in creative thinking to occur before bringing in analytical science thinking; and, b) it is the only way students can get a sufficient amount of instruction to improve their art and writing technical skills, and therefore, their ability to convey scientific learning artistically. This type of playful experimentation and learning will have results that cannot necessarily be predicted and requires both a release of control and an ability to weave in concrete, non-abstract information on the part of the instructor. While this can be challenging, it can also be extremely rewarding. In fact, this style of learning is commonly used in design thinking with design challenges.

When possible, collaboration between teaching artists and ODS instructors can be inspiring for both parties and create exciting shifts in the curriculum.

LEADING WITH BOTH

Camp Gray Outdoor School, Newport, Oregon (2016)

In 2016, two artists, Brandi Kruse and Kanani Miyamoto, worked with scientists at OMSI's Coastal Discovery Center to design an art-centered curriculum integrated with science for Camp Gray Outdoor School in Newport, Oregon. The artists were asked to create a curriculum without any input from the scientists. Kruse and Miyamoto designed lessons, experiments and projects around rubbings, contour drawings and block printing. On the day they taught rubbings, the OMSI scientists organized the students on the beach into groups based on land features and made a topographical map of Oregon in the beach sand. After the lesson on contour drawings of skulls, the scientists led a workshop on skulls, skins and bones in which they explored the form and the function of different animals' attributes. For the block print lesson, the artists asked the students to think of memories that they wanted to record forever and keep as a fossil. The scientists led a talk afterwards on how fossils are found and led a walk for everyone to search for them.

V. OPTIONS AND CONSIDERATIONS

The number of students served, the number of days and weeks run, and the budget of an Outdoor School can all be contributing factors to the types of art and creative writing activities integrated into a curriculum. For example, if an ODS has a thousand students to serve or a small budget, choosing art activities that require multiple or pricey materials will not be a viable option. Also, an overnight camp that lasts five days is likely to have more time available for art and creative writing instruction than a daytime-only camp or one that is only a few days long. Each has its own advantages and barriers, and each program provider will know best the constraints of their unique program and situation. Even so, none of these factors inhibit the ability of an ODS to integrate quality art and creative writing instruction.

The principal barriers affecting the degree to which an ODS can incorporate the arts into their curriculum are time, fear or lack of art instruction skills on staff, and the need to “sell” the arts or the need for buy-in from leadership (See Section III).

Figure 1. Options for considering how best to include more arts given the spectrum of barriers

<p>“I’m on the fence about the arts in ODS.” OR “It would be too difficult to change our program to include more arts.”</p>	<p>“I’m willing to give you 15 minutes for the arts.”</p>	<p>“I’m interested, but I don’t have the time, skills or resources.”</p>	<p>“I’m all the way in. Let’s bring in an artist or author and dedicate multiple hours to the arts.”</p>
<p>OPTIONS AND CONSIDERATIONS</p>			
<ul style="list-style-type: none"> • Re-evaluate the goals and vision of your ODS. • Speak with other ODS providers about their experience with incorporating art-centered activities into their programming. • Observe educators who are successfully integrating the arts into their science programs. 	<ul style="list-style-type: none"> • Consider all of the bullets from previous section. • Build a pitch for including the arts and align with learning standards by pulling apart the lesson. • Test the waters with a simple art or writing activity, like natural journaling or a rubbing, that require minimal instruction. • Break up one art or writing activity over the course of several days. • Give students blank pages and coloring utensils to create art and write in their field journal throughout their experience. • Use materials that are already available to you or that don’t require much set-up or clean-up. 	<ul style="list-style-type: none"> • Consider all of the bullets from previous section. • Connect with a local university, artist residency, interest group or the parents of the students you are serving to see if any artists or authors would be willing to instruct one or more activities as a volunteer. • Include a line in your budget for a contracted artist, author, or materials. • See resources compiled in Section VI and Appendices. 	<ul style="list-style-type: none"> • Consider all of the bullets from previous section. • Dedicate three or more hours to the arts in your program. • Have a field rotation that is centered on art or creative writing and reinforced with science concepts. • Bring in an artist or author from the community. • Try out more involved art projects, like cyanotypes, watercolor, pottery, textile dyeing, etc. • Support staff with training opportunities.

OPTIONS: **How to deliver** quality art and creative writing instruction

- Connect with a university, artist residency, interest group or the parents of the students you serve to see if there are individuals who are interested in volunteering as a guest artist or creative writing instructor. Sometimes such organizations require community service from their members or would be open to the suggestion even if they are not already providing such a service.
- Contract an artist/author from the local community or hire an employee qualified with art/creative writing instruction skills.
- Provide training opportunities for your instructors and then let them implement with flexibility.
- Explore a myriad of lesson plans and resources available online to help you design art- and writing-centered curricula (See Section VII).
- Give students a field journal with lined paper, blank paper, and watercolor paper. When students have the tools and time, they are empowered to do art and creative writing throughout their experience.

OPTIONS: **How to make time** for quality art and creative writing instruction

- Dedicate a field study or rotation to the arts (1-2 hour block).
- Make them options for recreational activities (30-60 minutes).
- Include them as reinforcement activities within a science lesson or during a transition (15-30 minutes).
- Divide what would be a multiple-hour project into smaller segments over the course of the program (i.e., 15-30 minutes in the morning each day over multiple days).
- If you're considering expanding the length of your ODS from a few days to a full week, plan on dedicating time for the arts in multiple ways.
- Dedicate a space to being an "art station" where materials can be left out and only partial cleaned-up.

DISSECTING AN ART LESSON INTO MULTIPLE PARTS

Maybe you only have 30 minutes or less each day to dedicate to the arts. Instead of squeezing a new art or creativing writing lesson in each short slot of time, have students work on one activity over multiple days or sessions. This will give students the time they need to further their technical skills and produce better results.

For example, dedicate the first session to having students get comfortable with their materials, drawing shapes, practicing shading or other techniques. If writing, spend the first session free-writing, that is, writing continuously for a set period of time without regard to spelling or grammar.

In a second session, students can study the composition of a landscape or subject by looking through a viewfinder (or rectangular hole in a piece of paper). A lesson on habitat or history can be woven in. If writing, students can expand on their free-writing by turning parts of it into a poem or short story.

In a third session, students could combine what they've learned and create a new art piece. Go out into the field to draw a light sketch without shading and then move somewhere more stable to apply paints, watercolor, or other materials. If writing, students should now begin their editing process, paying attention to spelling, grammar, and the flow of the language.

OPTIONS: How to gain buy-in and make a case for including the arts

- Re-evaluate the goals of the ODS. Sometimes taking a step back to question and re-establish program goals can be a productive way to discuss the multiple paths to achieving them. If decision-makers can agree that a shared goal of Outdoor School is to spark curiosity, interest and respect for the natural world than including the arts begins to make more sense.
- Start small with simple art or creative writing activities using the materials you have available and that don't take up much time, and see how students respond. If the responses or outcomes are positive, decision-makers may be willing to explore what expanding time dedicated the arts could look like.
- Talk to other ODS providers who have had success integrating the arts about the value they see and how they've made it work for their programs.
- Observe a program or instructor who is successfully integrating the arts into their outdoor environmental education program.
- Pull apart art or creative writing lessons to identify the learning that aligns with required learning standards (See Section IV and Appendix A).
- Deliver a strong case for the inclusion of the arts (Sections I and IV) to school teachers, funders, and other decision-makers to help change their perception of the roles arts play in Outdoor School.
- This cannot be understated: School teachers, school district and Educational Services District decision-makers and other funders must encourage and support ODS providers in integrating the arts. Without this support, providers may feel that doing so is too risky.



Students at Camp Tamarack Outdoor School next to their impromptu Earth art sculpture. Perspective is key when it comes to valuing the arts in outdoor environmental education. / Willamette Partnership

VI. LESSONS LEARNED

You may decide that you would like to invite a professional artist or writer from the local community to provide instruction at your Outdoor School. Whether you're contracting him/her directly or have found someone interested in volunteering, this can be a great option for enriching your students' Outdoor School experience. The following are tips for how each party can improve collaboration with the other.

TIPS FOR WORKING WITH VISITING ARTISTS AND WRITERS (FOR ODS DIRECTORS)

- Send your visiting artist or writer a schedule of the week and the activities that will be going on. Make sure you are clear about which activities they are responsible for teaching, which ones they are encouraged to be involved in, and which activities they are excused from. It's important to be clear about your expectations around scheduling and the flexibility visitors have to schedule their own time.
- Before the camp starts, send them the same information you send students attending the camp. Do not assume that these artists and writers know what to bring or how to best prepare for their ODS experience.
- Welcome them into the camp by inviting them to participate in activities that show them (or remind them) of camp culture.
- If you are contracting an artist or writer from the local community, reflect your appreciation for their experience and the technical instruction they are providing in their pay. These professionals have specialized skills to offer that are frequently undervalued and under-compensated.

TIPS FOR WORKING WITH OUTDOOR SCHOOLS (FOR VISITING ARTISTS AND WRITERS)

- Everyone you introduce yourself to when you first arrive at camp will be your ally for the rest of the time that you are there. It is helpful to make these initial connections before camp is in full swing and there are not as many opportunities to catch individual people in conversation.
- Know that you are entering an established community that likely has a routine that is already familiar to those around you. It's important to get involved if you want to feel like part of the group. If you have an invitation to a campfire or other activity, it will help you make connections and learn the lay of the land and the routines if you show up and hang out.
- This may be the camp staff's first time working with an "outsider," so don't take it personally if they don't know how you feel or how best to welcome you.
- If possible, arrive five minutes early to meals, especially for the first meal, so that you can observe where you should sit, how food is distributed, and other customs.
- Don't come to Outdoor School without a pillow, sheet, sleeping bag, flashlight or headlamp, snacks—and if coffee is necessary to your mornings, bring some and a way to make it—just in case.
- Don't plan activities that require the use of cell phones or Internet. Often times, you will be teaching in an area without Internet service, and students are not allowed to have or use their cell phones.

- Ask the Outdoor Schools if there are any cultural considerations that you should be particularly aware of when designing your lesson (i.e., the symbolism of certain animals to different cultures or religions).



“When teaching the history of indigo, I chose not to focus on the ugly history of slave labor and instead highlighted the unique ways in which various cultures have used indigo to their advantage and how it has become part of their traditions. For white teachers, there should be an intentional push away from delivering the typical narrative of dominant culture and instead focusing on counter-hegemonic curricula that rely on engagement with art and self-expression and that is rooted in inclusion and equity.”

--Brandi Kruse, Oregon artist and educator

TIPS FOR THIRD-PARTY INTERMEDIARIES

- Outdoor School directors have a lot to organize leading up to their ODS season. These are very busy people who sometimes work multiple jobs. Find out, as soon as possible, their preferred method for communicating and their availability. Limit the frequency of contacting them and make the time spent collaborating as efficient as possible.
- Ask the ODS director what the barriers to integrating art and creative writing have been in the past, what outcomes they’re expecting from your collaboration, and what they need to become self-sufficient and motivated to continue providing art/writing activities at their camp after you’re gone. This is critical to ensuring that you are designing relevant and realistic activities that fit the Outdoor School’s particular needs and can be sustainably adopted into their curriculum. For example, if an Outdoor Schools uses a specific template or guideline for training their instructors, make sure your suggestions accommodate their existing system and style of training tools.
- Learn how the ODS schedules its program and how much time the director is willing to dedicate to art and creative writing activities. This will help you understand where there are opportunities to integrate such activities (i.e., a field study rotation of two hours, 30 minutes of recreation, or an evening activity).
- It’s critical to glean how much the ODS director is interested in having art-centered curricula versus art activities that reinforce science lessons (See Section VI). Meet your counterpart where s/he are at by providing a suite of options and seeing what works best for him or her.
- Remember that is it your role to facilitate communication between a visiting artist/writing and the camp director. For example, be sure to make the needs the director has already communicated to you clear to the guest instructor before they brainstorm activity ideas. It’s also your role to keep the dialogue moving and fluid to respect everyone’s time and priorities.
- Artists and writers who are available will typically have other jobs and gigs. Do your best to pinpoint the time their services will be needed so they can plan accordingly.
- If you are contracting an artist or writer from the local community, reflect your value for their experience and the technical instruction you’d like them to deliver in their pay. These professionals have specialized skills to offer that are frequently undervalued and under-compensated.

GUIDELINES FOR TEACHING ART AND CREATIVE WRITING AT OUTDOOR SCHOOL

- Expect to teach in short bursts with hands-on activities in between your time spent instructing. For example, explain something for a few minutes and then ask the students to either write in their journals or to turn to the person next to them and discuss a few things they heard, that they are interested in, confused by, etc. This will help keep them engaged in their learning and interacting with others. It is also a good time for them to find out what they don't understand and ask.
- Don't be afraid to set the students loose on an art activity with too little information. Watch to see if they can handle the challenge or gather them back as a group if there are a few more things that they should know before letting them get back to work.
- Get them excited! The rest of their camp activities are geared that way, and students are there to learn and to have fun.
- Arrive early enough to encounter several surprises and have backup plans just in case you encounter something outside of your expectations. It is helpful to have a get-to-know-you game or two up your sleeve that requires little to no materials just in case the weather takes a turn or you need a little more time before you can get started. Ideally, this would be an activity with some connection to the project you are doing with them. In camp scenarios, even a well laid out lesson plan can get off-schedule; a little pre-planning for the unexpected delay and you will roll through it like a pro.
- At camp, “teamwork makes the dream work.” Everyone wants the kids to have the time of their lives. Don't be afraid to ask a counselor or camp staff member to suggest a game to you if you get stuck.



Students enjoying a Shibori indigo dyeing activity at Philomath Outdoor School. / Philomath Outdoor School

VII. RESOURCES

LESSON PLANS AND INSTRUCTION DIRECTIONS

Opening the World Through Nature Journaling, by John Muir Laws, provides step-by-step lessons and background on how to teach natural science illustration and nature journaling. johnmuirlaws.com

Drawing with Children, by Mona Brookes, is a book on how to teach drawing in non-threatening environments to achieve realist representations of the subjects drawn. Her website has lesson plans and a curriculum. monart.com

Developing Creative Language Skills Through Nature Observation: Lessons and Activities for Nature Loving Teachers, compiled and illustrated by Kyle Nagelmann, is a resource for nature writing activities.

Honoring Our Rivers: Lesson Plans for Camp Tamarack Outdoor School (Appendix B).

When in doubt, Pinterest (pinterest.com) can be a good resource for brainstorming art activity ideas (i.e., try searching “art projects for middle school”). Once you have an idea, do a search on Google or YouTube to learn how involved the project is, what supplies you would need and if you are interested in learning more.

ACTIVITY IDEAS TO GET YOU STARTED

Anthotype

A photographic print process created using photosensitive material from plants. An emulsion is made from crushed flower petals or any other light-sensitive plant, fruit or vegetable. A coated sheet of paper is then dried. Place objects on the paper, like a plant, and expose to direct sunlight.



Maple leaf, anthotype with sour cherry juice, two-hour exposure time at high noon in summer time / Wikimedia Commons

Cyanotype

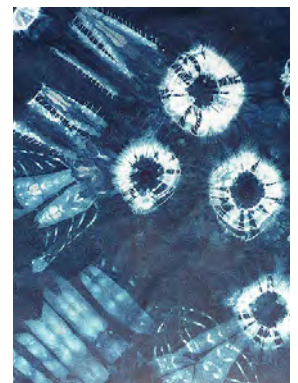
A photographic print process that produces a cyan-blue print. A photosensitive emulsion is coated on paper and dried. Place objects on the paper, like a plant, and expose to direct sunlight.



Algae cyanotype / Anna Atkins, Wikimedia Commons

Shibori Indigo Dying

Shibori is a Japanese form of dying that revolves around different ways of binding and folding fabric to create different patterns and is most commonly practiced with indigo dye, derived from the indigo plant.



Shibori indigo dying / Creative Commons, Flickr.

Charcoal

Use charcoal sticks or graphite as an alternative to drawing with pencil and paper.



Charcoal landscape / Creative Commons.

Natural science illustration

Choose a small object found in nature and study it as you draw its contour in pencil and then shade with color pencils and/or watercolor.



Oak leaf illustration using watercolor and colored pencil / Catherine Alexander

Free Writing or Stream-of-Consciousness Writing

Write continuously for a set period of time without regard to spelling or grammar. Chose a word or topic to kick it off or don't. This helps writers overcome blocks of apathy and self-criticism.

Free verse poetry

A form of poetry that does not use consistent meter patterns, rhyme, or any other musical pattern.

Metaphors, Similes, and Imagery

These literary devices are essential ingredients in creative writing. Have students learn and practice them, drawing inspiration from the natural world.

DIRECTORY

Directory of Oregon artist, writers, networks, and organizations that Outdoor School providers can contact if they would like to contract someone for ideas, lesson planning, or facilitation:

Brandi Kruse

brandikruse.com | brandikruse@gmail.com

Bridgelab at Pacific Northwest College of Art

503-821-8937

Caldera

calderaarts.org/caldera

Caldera Alumni: calderaarts.org/caldera/arts-in-residence/alumni

Earth Art

Use objects found in nature to create a sculpture, design or pattern outside.



Earth art / Andy Goldsworthy

Rubbing or Frottage

Place an object beneath a piece of paper and rub a medium over it to capture its characteristics. Rubbings can be used to study texture.



Leaf rubbing / Creative Commons, Flickr

The Five Senses

Have students observe what they're seeing, smelling, feeling, hearing, and tasting in an outdoor setting and then write them down using as many adjectives or figures of speech as possible.

Cara Burkamp

Cara.Burkamp@gmail.com

Carla G. Javier Brea

carla-javierbrea.squarespace.com

cjavierbrea@pnca.edu

503-893-0969

Carter Hubbard

carterhubbard.com | carter.hubbard@gmail.com

919-616-3659

Diane Jacobs
dianejacobs.net/work

Donna Cloud
donnacloud.weebly.com | donna_cloud@ddsd40.org
503-544-4396

Ian Nickols
inickols@pnca.edu
209-676-7188

Lauren Goding
laurengoding.com | lgoding@pnca.edu

Lauren Moran
Laurengracemoran.com
Laurenmoran333@gmail.com
860-202-7770

Matthew Blanchard
mblan034@gmail.com

Mesha Wood
mesha_wood@fws.gov
971-336-1042

Right Brain Initiative
therightbraininitiative.org/artist-roster

Roger Peet
toosphexy.com

Sarah Farahat
sarahfarahat.com
503-313-5294

Serena Dressel
serenadresselpdx@gmail.com
503-313-1049

Signal Fire
signalfirearts.org
Affiliated alumni artists:
signalfirearts.org/community
Affiliated artist: signalfirearts.org/who-we-are

Tess Malijenovsky
tessmalijenovsky@gmail.com
704-491-3158



Visiting artist, Brandi Kruse, instructs a rotation on Shibori indigo dyeing at Philomath Outdoor School. / Willamette Partnership



HONORING OUR RIVERS

A Student Anthology

**Guide to Aligning Natural Science Illustration Activities
with Next Generation Science Standards and Common Core**

Grade Level	NGSS Discipline Core Idea (DCI)	NGSS Performance Expectation	NGSS Clarification Statement	Examples Using Nature Illustration (option to include writing activity to align with Common Core)	Performance Expectations Related to Common Core Standards
K	Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment	K-ESS2-2 Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.	<i>Examples of plants and animals changing their environment could include a squirrel digs in the ground to hide its food and tree roots can break concrete.</i>	<i>An illustration of an egg or critter that can be found burrowed on the beach or a beaver that's made a dam can be evidence from the observations they made of the natural object and/or its environment to support an argument.</i>	W.K.1 - Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or the name of the book they are writing about and state an opinion or preference about the topic or book. W.K.2 - Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.
K	Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment	K-ESS3-1 Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live.	<i>Examples of relationships could include that deer eat buds and leaves, therefore, they usually live in forested areas; and, grasses need sunlight so they often grow in meadows. Plants, animals, and their surroundings make up a system.</i>	<i>An illustration of a leaf can be the model that represents the food that deer's eat, which is why they live in forests. An illustration of a periwinkle snail can be the model that represents rocky, intertidal areas along the coast, which it lives in so it can feed on algae and barnacle larvae.</i>	SL.K.5 - Add drawings or other visual displays to descriptions as desired to provide additional detail.
K	Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment	K-ESS3-3 Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.	<i>Examples of human impact on the land could include cutting trees to produce paper and using resources to produce bottles. Examples of solutions could include reusing paper and recycling cans and bottles.</i>	<i>An illustration of an invasive or native plant/animal can be used in communicating either how humans have introduced invasive species or the important of planting/protecting native ones.</i>	W.K.2 - Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.

K	Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment	K-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive.	<i>Examples of patterns could include that animals need to take in food but plants do not; the different kinds of food needed by different types of animals; the requirement of plants to have light; and, that all living things need water.</i>	<i>An illustration of an object found in nature that needs water from a nearby source of water for survival, such as part of a plant or seashell.</i>	W.K.7 Participate in shared research and writing projects.
1	Structure, Function and Information Processing	1-LS1-1 Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.	<i>Examples of human problems that can be solved by mimicking plant or animal solutions could include designing clothing or equipment to protect bicyclists by mimicking turtle shells, acorn shells, and animal scales; stabilizing structures by mimicking animal tails and roots on plants; keeping out intruders by mimicking thorns on branches and animal quills; and, detecting intruders by mimicking eyes and ears.</i>	<i>An illustration of a nut shell or mollusk shell could mimic a bicyclist's helmet. An illustration of a plant's roots or an animal's tail could mimic stabilizing a building or airplane; a thorn or animal quill could mimic keeping out intruders, etc.</i>	W.1.7 Participate in shared research and writing projects.
1	Structure, Function and Information Processing	1-LS3-1 Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.	<i>Examples of patterns could include features plants or animals share. Examples of observations could include leaves from the same kind of plant are the same shape but can differ in size; and, a particular breed of dog looks like its parents but is not exactly the same.</i>	<i>Examples of observations depicted in an illustration could include leaves from the same kind of river-related plant are the same shape but can differ in size.</i>	W.1.8 - With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

2	Interdependent Relationships in Ecosystems	2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats.	<i>Emphasis is on the diversity of living things in each of a variety of different habitats</i>	<i>Two illustrations of objects found in nature could reflect observations of river habitat's diversity of life.</i>	W.2.8 - Recall information from experiences or gather information from provided sources to answer a question. SL.2.5 - Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings.
3	Interdependent Relationships in Ecosystems	3-LS4-3 Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.	<i>Examples of evidence could include needs and characteristics of the organisms and habitats involved. The organisms and their habitat make up a system in which the parts depend on each other.</i>	<i>An illustration of a bird that depends on fish in the river or ocean.</i>	SL.3.4 - Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace. W.3.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons. W.3.2 - Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
3	Inheritance and Variation of Traits	3-LS3-2 Use evidence to support the explanation that traits can be influenced by the environment.	<i>Examples of the environment affecting a trait could include normally tall plants grown with insufficient water are stunted; and, a pet dog that is given too much food and little exercise may become overweight.</i>	<i>An illustration of a small adult fish can be evidence of a shallow river or creek.</i>	SL.3.4 - Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace. W.3.2 - Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

3	Inheritance and Variation of Traits	3-LS4-2 Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.	<i>Examples of cause and effect relationships could be plants that have larger thorns than other plants may be less likely to be eaten by predators; and, animals that have better camouflage coloration than other animals may be more likely to survive and therefore more likely to leave offspring.</i>	<i>An illustration of a crab's larger pincer may be more likely to outcompete other crabs for survival. An illustration of a tree leaning over the river may grow bigger than another because it has better access to sunlight.</i>	SL.3.4 - Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace. W.3.2 - Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
4	Structure, Function and Information Processing	4-LS1-1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.	<i>Examples of structures could include thorns, stems, roots, colored petals, heart, stomach, lung, brain, and skin.</i>	<i>An illustration of a thorn, pincer, gills.</i>	W.4.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons and information.
5	Ecosystems: Interactions, Energy, and Dynamics	5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment	<i>Emphasis is on the idea that matter that is not food (air, water, decomposed materials in soil) is changed by plants into matter that is food. Examples of systems could include organisms, ecosystems, and the Earth.</i>	<i>An illustration of two or more leaves showing the regular shape of the stomata and guard cells.</i>	SL.5.5 Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. 5-LS2-1 Mathematics – MP.2 Reason abstractly and quantitatively. 5-LS2-1 MP.4 Model with mathematics.

Middle School	Natural Selection and Adaptations	MS-LS4-2 Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships.	<i>Emphasis is on explanations of the evolutionary relationships among organisms in terms of similarity or differences of the gross appearance of anatomical structures.</i>	<i>Accompany explanation with a supporting illustration showing anatomical similarities and differences between a fossil and a similar modern organism.</i>	WHST.6-8.9 - Draw evidence from informational texts to support analysis reflection, and research
Middle School	Growth, Development, and Reproduction of Organisms	MS-LS1-4 Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.	<i>Examples of behaviors that affect the probability of animal reproduction could include nest building to protect young from cold, herding of animals to protect young from predators, and vocalization of animals and colorful plumage to attract mates for breeding. Examples of animal behaviors that affect the probability of plant reproduction could include transferring pollen or seeds, and creating conditions for seed germination and growth. Examples of plant structures could include bright flowers attracting butterflies that transfer pollen, flower nectar and odors that attract insects that transfer pollen, and hard shells on nuts that squirrels bury.</i>	<i>An illustration based on the experience of observing of a natural object and its environment is empirical evidence. Illustration example: the hard shell on nuts that squirrels bury.</i>	<ul style="list-style-type: none"> • MS-LS1-4 (RST.6-8.1) - Cite specific textual evidence to support analysis of science and technical texts.

High School	Ecosystems: Interactions, Energy, and Dynamics	HS-LS2-6. Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.	<i>Examples of changes in ecosystem conditions could include modest biological or physical changes, such as moderate hunting or a seasonal flood; and extreme changes, such as volcanic eruption or sea level rise</i>	<i>An illustration over time to demonstrate a plant life history. Illustration example: plants are starting to grow and bloom earlier in the spring and survive longer into the fall. Illustration example: Primary succession with the formation of lichens and moss covering a rock.</i>	WHST.11-12.9 - Draw evidence from informational texts to support analysis, reflection, and research. WHST.9-12.1 - Write arguments focused on discipline-specific content.
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Extensions:

Engineering Design K-2, ETS1.B: Developing Possible Solutions Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people.

Engineering Design Elementary: Biomimicry - https://www.teachengineering.org/activities/view/cub_lifescience_lesson03_activity2

Additional Resources:

Fractals, Math, and Nature Educator Guide: <http://fractalfoundation.org/fractivities/FractalPacks-EducatorsGuide.pdf>

Fractals, Math, and Watersheds. Learn about the fractal nature of rivers, understand what a watershed is and create your own fractal design. <http://fractalfoundation.org/resources/fractivities/fractal-rivers/>

Math and Natural World: <https://www.neefusa.org/resource/rooted-math-educator-toolkit>



SPONTANEOUS EARTH ART Nature-based Art Activity

No messy materials needed for this art activity. All you need are the outdoors! Students channel their inner artist and create sculptures out of found materials from nature.

Students will...

- Learn about Earth art and the philosophy of creating impermanent art.
- Learn about the work of Andy Goldsworthy, a famous, contemporary British sculptor, photographer, and environmentalist.
- Heighten their observation skills by viewing nature with an artistic perspective.
- Engineer sculptures using natural materials.

Pre-Activity Education:

No prior education is necessary. Option to watch a documentary about Andy Goldsworthy for context and inspiration.

Setting:

Outdoors

Grade Level:

Suggested for Grades 5-8

Timing:

15-45 minutes

Materials:

- Exhibit A: Photos of Andy Goldsworthy Artworks



INSTRUCTIONS FOR STUDENTS

Introduce to Earth Art (5-10 minutes)

Before introducing the topic, make sure your group is in a natural setting outdoors, such as a forest or a beach.

Introduce the topic. Explain to your students that we are all going to make art sculptures out of the Earth. This is called *Earth art*. These are temporary sculptures made out of natural materials found in nature, like rocks, soil, twigs, and plants.

Ask the group if anyone has ever made a sandcastle. Explain that this is an example of a temporary sculpture made from natural materials. The sandcastle is impermanent, or temporary, because when the ocean's tide comes in it washes it away.

Discuss with the group any or all of the following questions:

- “Why would an artist create an art piece that is not permanent? What could be the value of making art simply for the sake of the creative process?” If students are struggling, ask them to think about why they build sandcastles.
- “What are some similarities between Earth art sculptures and nature?” (*ie, impermanence, change over time, affected by their environment, like the weather*)
- “Is a cairn Earth art?” (*The answer is it's up to your interpretation. Discuss how like Earth art, cairns are outdoor, impermanent sculptures made of found, natural materials, but cairns also have a function--marking a trail. Sometimes art has a function, and sometimes tools can be artistic.*)

Ready, Set, Make a Sculpture! (10-30 minutes)

Give students at least 10 minutes to collect their materials and create a sculpture or design.

(Optional) Gallery Walk (10 minutes)

When time is up, have students walk around to each other's sculptures and designs, or have each student present what they created.

TEACHER TIPS

Earth art is a form of *installation art* that is located outdoors. Option to introduce the term *installation art*, which is an artistic genre of three-dimensional works that often are site-specific.

Option to discourage students from using anything that is living, like a flower.

If Leave No Trace is in your practice, ask students to disperse their sculptures when finished.

EXHIBIT A: PHOTOS OF ANDY GOLDSWORTHY ARTWORKS



EXHIBIT A: PHOTOS OF ANDY GOLDSWORTHY ARTWORKS





PONDEROSA PINE SCIENCE ILLUSTRATION SKETCH

Nature-based Art Activity Related to Plant Identification

Before there were cameras, scientists would sketch their observations in the field. Students can practice doing the same in this quick, hands-on activity that invites them to closely observe the unique characteristics of a ponderosa pine tree.

Students will...

- Reinforce plant identification knowledge.
- Create a science illustration of a ponderosa pine tree's pinecone and needles.
- Heighten observation skills by focusing on the details, shapes, and proportions of the subject.

Pre-Activity Education:

No prior education is necessary, however, this activity would nicely complement any prior lessons on identifying ponderosa pines.

Setting:

Outdoors or indoors

Grade Level:

Suggested for Grades 5-8

Timing:

15-30 minutes

Materials:

- Pencil with eraser
- Exhibit A: Ponderosa Pine Sketch

Sources:

Denniston, Ken. "Ponderosa Pine – Pinus Ponderosa." *Ponderosa Pine*, 2011, nwconifers.com/nwlo/ponderosa.htm.
Laws, John Muir, and Emily Breunig. "Sketching in Field Journals." *Opening the World Through Nature Journaling*, California Native Plant Society, pp. 3.



INSTRUCTIONS FOR STUDENTS

Introduction to Field Sketching (5-10 minutes)

Introduce the topic. Explain to your students we are all going to make a scientific illustration, or field sketch, of a ponderosa pine tree's pinecone and needles.

Challenge students to think of how field sketches can be a useful tools for scientists. Explain how before there were cameras, scientists would sketch plants and animals to document details about their observations.

Explain to students that the purpose of our sketches is to accurately observe and record data and that our artistic ability is a skill that we can improve over time with practice.

Time to Draw! (10-20 minutes)

Sketching. Ask students to flip to the page in their field journal with the ponderosa pine sketch (Exhibit A handout) and to pull out a pencil. If outdoors, ask your students to go identify a ponderosa pine tree and find a pinecone that they can illustrate.

Whether using a real ponderosa pinecone or using the picture in "Exhibit A", ask students to do the best they can to sketch the pinecone in the provided space. Ask them to pay close attention to the size proportion and the lightness and darkness (known as *tones*) of the shapes that they see, which can be important clues used to help us identify ponderosa pine trees. Instruct students to include notes beside their sketch, such as the approximate size, texture, or color of the pinecone--any detail that would help someone else identify the plant.

Ask students to do the same for the pine needles on the branch of a ponderosa pine tree.

If some students finish early, see if you can suggest adding some details like shading to show shadows. Or, you can ask them to sketch the tree, or to flip the page and try to re-draw the pinecone from memory.

TEACHER TIPS

"For nature art to work its observational magic, students need to know that the goal of such drawing is not to make pretty pictures, but instead to accurately observe and record data. If the goal is to make pretty drawings, it can get in the way of documenting observations because of one's inner critic or memories of dismissive comments about one's ability to do art--true for adults, too. 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.' As a result, students do draw and their artistic ability improves with the practice--it's a skill, not a gift per se."

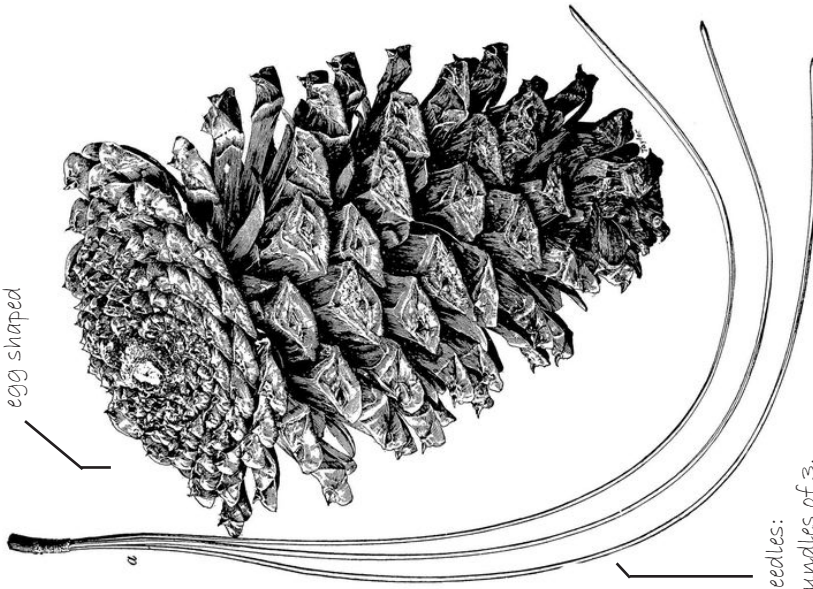
From "Opening the World Through Nature Journaling," by Emily Breunig and John Muir Laws.

EXHIBIT A: PONDEROSA PINE SKETCH

Ponderosa Pine Example

Bark: Orange
puzzle pieces

Cones: 3-6" long,
egg shaped



Needles:
Bundles of 3,
5-10" long

FIG. 13.—*Pinus ponderosa*.

Your Sketch Below



HONORING OUR RIVERS

LICHEN YOUR DRIFT

Creative Writing Activity Related to Three Types of Lichen

After learning about the three principal types of lichen, students practice freewriting to make creative leaps in writing and come up with memorable sentences they'll never forget about each lichen!

Students will...

- Reinforce understanding of the three types of lichen by making memorable associations to each one.
- Elicit creative thinking through freewriting.
- Exercise literary devices, such as metaphor and simile, and draw parallels between imagery and the overarching theme.

Pre-Activity Education:

It is recommended that students learn about the characteristics of crusty, leafy and shrubby lichens prior to this writing exercise.

Setting:

Outdoors or indoors

Grade Level:

Suggested for Grades 5-8

Timing:

25-45 minutes

Materials:

- Paper or a blank page in a field journal
- Writing utensil
- Exhibit A: BEETLES Lichen Key, or real lichen

Sources:

"Lichen Exploration." *Beetles Project*, The Lawrence Hall of Science, University of California Berkeley, beetlesproject.org/resources/for-field-instructors/lichen-exploration-2/.



INSTRUCTIONS FOR STUDENTS

Introduction to Freewriting (5-10 minutes)

Introduce the topic. Explain to students that we are going to do a *freewriting* activity about the three types of lichen: crusty, leafy and shrubby.

Explain the meaning of *freewriting* as a pre-writing technique that captures the uninterrupted flow of our thoughts and ideas. It's when we write down everything that comes to our minds even if it doesn't make much sense in the moment, like a dream. The goal is to never let your pencil or pen stop moving. Tell students not to worry about spelling, punctuation, or whether the writing is "good." What's most important is to keep writing, even if you have to write, "I am trying to think of what else I can say." If students get stuck, change their point-of-view by looking somewhere new (*ie, behind, down, etc*) and write the first thing they notice. The purpose of *freewriting* is to help writers overcome self-criticism and the feeling of getting "stuck."

You can explain that when we exercise our brains in this way, we are taking off our analytical thinking caps and putting on our creative thinking caps. Synapses in our brain are firing in more areas of the brain, which is why our brain is able to make greater leaps in ideas.

Example: "Life is not a series of gig lamps symmetrically arranged; life is a luminous halo, a semi-transparent envelope surrounding us from the beginning of consciousness to the end." ~ Virginia Woolf, The Common Reader (1925). In this example, Virginia Woolf compares life to seemingly random objects, like gig lamps, halos, and semi-transparent envelopes.

Writing and Sharing (20-35 minutes)

Gather students and ask them to take a seat, pull out their writing utensils, and turn to a blank page in their field journal.

Tell students that when you name one of the three types of lichen (*ie, crusty lichen*), they will write down anything and everything that comes to their minds about that lichen into a paragraph or list for the next three minutes. Ask the students, "What does the lichen remind

TEACHER TIPS

Content knowledge from BEETLES Project:

- Leafy lichen: leafy-shaped, usually attached to rock or wood in just one place
- Crusty lichen: flat edges, stuck to rock or wood like paint
- Shrubby lichen: often like a beard, hangs down, looks like a small bush

Optional: Discuss with the group where creative thinking skills (or, out-of-the-box thinking) show up in the real world (*ie, problem-solving, marketing, social media, commercials, music, etc*).

It's helpful for students to have a visual aid to reference for each type of lichen, whether its real lichen found outdoors or a photograph of each kind of lichen (see Exhibit A: BEETLES Lichen Key).



TEACHER TIPS

Keep reminding students not to stop writing.

To shorten this exercise, educators may choose to only practice the drill once with one type of lichen rather than all three. If you are only doing the drill once, ask students to choose one of the three lichens to write about so that the group still has to guess which lichen their campmate wrote about. Students can still share their sentences.

INSTRUCTIONS FOR STUDENTS

you of?” and “What else does it look or act like?” Answers can be one-word adjectives or objects, or they could be a description of an image or memory that comes to their mind.

Remind students to try not to stop writing once you say “go,” even if it leads to a totally random thought.

For example: “Crusty lichen look like splattered paint. Paint. Paint. Yellow paint. My bedroom is painted yellow. I got to choose that color and I like it because yellow reminds me of sunflowers. etc...”

When you are ready to begin, name one of the three lichens and instruct students to begin. Keep track of time for three minutes.

Once time is up, instruct students to write a sentence using as many words from their freewriting paragraph as possible. Tell them...

- that they can add new words to their sentences to help them make more sense and they can add more vivid details.
- NOT to use the words “leafy,” “crusty,” or “shrubby” in their sentence. (That will give it away!)
- have fun making up their sentences. It’s okay if they’re silly or don’t make sense!

For example: “This looks like golden yellow brain splatter like the cracked mud of a hot desert.”

Allow a few minutes for them to put together their sentence.

Repeat for this drill for the other two types of lichen, time permitting.

Once you’ve repeated this exercise for each type of lichen, ask students to read one of their sentences and the rest of the group can guess which type of lichen it is. Or, take the guessing game out of it and simply ask for students to share.

As students share their sentences, you can point out or ask the group to point out any literary devices (ie, imagery, metaphor, alliteration, etc). Commend students for making associations that are appropriately comparable to the lichen or whenever a literary device is used correctly. Creativity can be celebrated here!

Lichen Key

<http://beetlesproject.org>

Decide if your lichen most closely resembles one of these three kinds:

Leafy

leafy-shaped, usually attached to rock or wood in just one place



image © A.J. Silverside @ lastdragon.org

Crusty

flat edges, stuck to rock or wood like paint



image courtesy of Roger Roantrum/Wikimedia Commons

Shrubby

often like a beard, hangs down, looks like a small bush



image © A.J. Silverside @ lastdragon.org

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image courtesy of Roger Roantrum/Wikimedia Commons

Shrubby

often like a beard, hangs down, looks like a small bush



image © A.J. Silverside @ lastdragon.org



HONORING OUR RIVERS

HAIKU POETRY & NATURE WALK

Outdoor Poetry Writing Activity

Students learn how to write a haiku poem, a traditional form of Japanese poetry. Haikus are short, don't need to rhyme, and lend themselves to any topic (though typically related to nature). This versatile exercise can be used to write haikus along a quiet nature walk or to reinforce science topics that have been recently learned, like plant identification.

Students will...

- Highten observation skills in the environment.
- Learn about haikus and how to write them.
- Become aware of syllable patterns in poetry.
- Practice mindfulness.

Pre-Activity Education:

No prior knowledge is necessary to do a nature walk and write a haiku.

Setting:

Anywhere the group can walk in a natural setting and where specific plants studied can be found.

Grade Level:

Suggested for Grades 5-8

Timing:

25-45 minutes

Materials:

- Paper or a blank page in a field journal
- Writing utensil
- Exhibit A: Examples of Haiku Poems
- Exhibit B: Sensory Brainstorm

Sources:

Wadia, Rashna. "Experiencing Haiku Through Mindfulness, Movement & Music - ReadWriteThink." *Readwritethink.org*, National Council of Teachers of English, www.readwritethink.org/classroom-resources/lesson-plans/experiencing-haiku-through-mindfulness-30835.html?tab=4#tabs.



INSTRUCTIONS FOR STUDENTS

Introduction to Haiku (5-10 minutes)

Introduce the topic. Explain to students that we are going to write a *haiku poem*. Ask students what they already know about haikus. Include the following facts if they're not mentioned:

- This form of poetry originates from Japan.
- Traditionally, haikus are meant to be created in the present moment, capturing the images, emotions and experiences of being in nature.
- Haikus have three lines, often with a syllable pattern: 5 syllables in the first line, 7 syllables in the second line, 5 syllables in the last line.
- Traditional haikus include a reference to the season of the year, called a *kigo*.

Read and show students "Exhibit A: Examples of Haiku Poems." Discuss the above characteristics that make them haikus. Ask students what they visualized and felt as they listened to the poems.

Discuss with students their thoughts on how the use of fewer words can be more powerful than the use of many.

Introduction to Mindfulness (5 minutes)

Explain to students that since haikus are often created in the present moment, we are going to practice *mindfulness* on a short nature walk to help us experience and write a haiku of our own.

Explain that *mindfulness* is when the mind is fully aware of what's happening in the present moment--what you're doing, thinking, and sensing as well as what's going on in the space you're moving through. Mindfulness is a mental state.

Discuss with students what it means to slow down and notice things around you. Why is it important for us to slow down and notice what's around us? Why might this be difficult for us to do?

TEACHER TIPS

If a student says they saw flowers blooming, you can follow up with a more specific question like, "Did you see anything in addition to the lilies blooming?" or, "What colors did you see?"



TEACHER TIPS

Option to already have “Exhibit B: Sensory Brainstorm” worksheet on a page in the field journal.

INSTRUCTIONS FOR STUDENTS

Nature Walk & Sensory Brainstorm (10 minutes)

Before going on a nature walk, give students a vague phrase such as “leaves falling” or “loud noise,” and ask them for ideas on how to add more specific details to help us better visualize the image. For example, what color or shape are the leaves and how are they falling? What is the loud noise, and can you think of another adjective to replace the word “loud”?

Pass out the “Exhibit B: Sensory Brainstorm” worksheet and ask students to pull out a writing utensil.

For the nature walk, you can either guide students on a portion of a trail or ask students to walk around the area. Either way, students should walk slowly and silently during the walk. Remind students that they are going to practice mindfulness. As they become aware of their internal and external environment, they should write what is noticed under the six columns of the worksheet. Allow at least five minutes for students to walk quietly and practice mindfulness.

Writing Haiku (5-15 minutes)

Ask students to gather back in a group and take a seat. Tell students to pick one thing from their worksheet that they would like to focus their haiku poem on. It can be anything as large as a lake or as small as a bug.

On a blank page (or wherever there is blank space to write), ask students to write a list of as many adjectives and descriptions of their subject as they can think of. Try to come up with at least five things.
Example: Tall swaying tree.

Now write a haiku about your subject using some of the words from your brainstormed list. Remind students what they’ve learned about haikus:

- They capture the images, emotions and experiences of being in nature
- Syllable pattern: 5-7-5
- Option to include a *kigo* (clue about the season)



INSTRUCTIONS FOR STUDENTS

(Optional) Share Haikus (5 minutes)

Ask for volunteers to read their haiku poems to the group. Ask the group what they visualized or felt when they listened to the author's poem.

TEACHER TIPS

Count the syllables as the student reads each line of their haiku. Avoid saying that a student's poem is "good." Rather, commend the author's haiku for correct usage and understanding of the elements of haiku and also for descriptive language that created good imagery.



EXHIBIT A: EXAMPLE OF HAIKU POEMS

Lilies Blooming

By Kobayashi Issa, translated from Japanese

Poem compares two images, is written in present tense, captures images and emotions being in nature.

Lilies blooming _____
thick and fast _____
a skylark's lonesome cry

Kigo, indicates spring

Not all haikus follow the syllable pattern of 5-7-5, especially when translated from their original language.

Spring

By Amy Reed (6th grader)

The first flower blooms, _____
And the sun shines upon it.
Spring is here at last.

"First flower," "blooms," and "Spring" all indicate spring season

Poem follows 5-7-5 syllable pattern.



HONORING OUR RIVERS

EXHIBIT B: SENSORY BRAINSTORM WORKSHEET

Sights	Sounds	Smells	Taste	Touch	Emotions



HONORING OUR RIVERS

FIRE MANAGEMENT

Persuasive Writing Activity Related to Fire Management

Learning how to write persuasively is an important skill that students will use throughout life. In this writing exercise, students pretend they live in the nearest town and compose letters to a fictional town official to make the case for how the local community should manage wildfires. Students apply prior knowledge about fire ecology and approaches to fire management to support their recommendation.

Students will...

- Reinforce what they've learned about fire ecology and approaches to fire management.
- Students learn the structure of a persuasive essay by developing logical arguments, using supporting evidence and examples, and ending with a concluding summary.

Pre-Activity Education:

This writing exercise is designed to complement a lesson about fire ecology and different approaches to fire management.

Setting:

Outdoors or indoors

Grade Level:

Suggested for Grades 5-8

Timing:

25-60 minutes

Materials:

- Paper or a blank page in a field journal
- Writing utensil
- Exhibit A: Persuasive Essay Template
- Exhibit B: Transition Words (Optional)

Modifications:

This exercise can be adapted for any challenging environmental management issue or controversial topic.

Sources:

"Fire Management Discussion." *Beetles Project*, The Lawrence Hall of Science, University of California Berkeley, beetlesproject.org/resources/for-field-instructors/fire-management-discussion/.

"Persuasion Map - ReadWriteThink." *Readwritethink.org*, National Council of Teachers of English, www.readwritethink.org/classroom-resources/student-interactives/persuasion-30034.html.

Possel, Heiko. "Transition Words." *Smart Words - Advanced Vocabulary*, www.smart-words.org/linking-words/transition-words.html.



INSTRUCTIONS FOR STUDENTS

Introduce to Persuasive Writing (5-10 minutes)

Introduce the topic. Explain to students that we are going to imagine we live in a nearby town that is debating how it should manage forest fires in the area. We're going to think about how we would write a letter to the town official with our opinion on how fires should be managed in the area.

Ask, "Does anyone know or can guess what is *persuasive writing*?"

Listen to the students' answers. You can explain the definition of persuasive writing as a form of writing that builds a logical argument by using supporting evidence, examples, and a concluding summary.

Plan Your Letter (20-30 minutes)

Ask students to flip to the page in their field journals that has the persuasive writing letter template ("Exhibit A: Essay Template") or distribute the handout.

Explain that the introduction paragraph is where we present why we're writing a letter and what it's about in a few sentences. You will include your recommendation and the three reasons that support it; but first, let's think about what those are.

Ask the group what they would recommend to the town official. Ask them why they came to this conclusion. What is their evidence? Do they have any examples or facts to support their statements? Continue discussing as a group so that students can listen and learn from each other's different perspectives and the supporting evidence.

Once the group has had a chance to share their ideas, ask each student to write their recommendation in the introduction box of the template.

Example: I am writing to recommend that our town does [fill in the blank] when there are forest fires nearby.

Main reasons. Direct students to jot down three reasons that support

TEACHER TIPS

Option to continue this exercise as a group rather than having each student fill in the template.

TEACHER TIPS

Transition words or phrases are like bridges between parts of your paper. These “parts of speech” help carry a thought from one sentence to another, from one idea to another, or from one paragraph to another

See “Exhibit B” for a list of transition words and phrases.

INSTRUCTIONS FOR STUDENTS

their argument in each of the main reason boxes of the template.

Supporting evidence. They should also write the supporting evidence that they would use to defend each reason in the “facts or examples” boxes of the template. Since this is a fictional letter, students can make up examples (*Example: “When last year’s fire did X, Y were the results”*). Instructors should clarify that in real life you have to use facts that can be proven and that it’s a good idea to include the source of the information.

Writing the introduction. Now that students have planned their recommendation and three supporting reasons, they can craft the introduction in the appropriate template box. Give students a few minutes to craft their introductions. The introduction should have two to five sentences explaining

- why they are writing,
- what their recommendation is on fire management, and
- briefly state the three reasons that support this recommendation.

Explaining conclusion. Explain to students that the last part of a persuasive essay should be the *conclusion*. Ask students, “What do you think is the purpose of a conclusion in an essay?”

Listen to their answers and add that the conclusion is the last paragraph of an essay and it brings the reader full circle to the original purpose of the letter or essay. In a conclusion, it’s a good idea to restate the argument and supporting evidence you introduced in the introduction to suggest to your reader that you’ve presented what you intended to share. Give students a few minutes to craft their conclusion.

(Optional) Extension: Writing the Letters (20 minutes)

Time permitting, having the students write out the letters helps complete the lesson by demonstrating what the finished product looks like. Have the students write the fictional letter drawing from their completed templates and what has been discussed as a group. This is a good opportunity to help students practice writing *transitions* from paragraph to paragraph.



EXHIBIT A: PERSUASIVE ESSAY TEMPLATE

Introduction

Main Reason 1

Main Reason 2

Main Reason 3

Supporting Evidence 1

Supporting Evidence 2

Supporting Evidence 3

Conclusion

EXHIBIT B: TRANSITION WORDS

Linking Words - A complete list of Transition Words & Conjunctions also called Cohesive Devices - Connecting Words

Transition Words and Phrases

<p>in the first place not only ... but also as a matter of fact in like manner in addition coupled with in the same fashion / way first, second, third in the light of not to mention to say nothing of equally important by the same token</p>	<p>again to and also then equally identically uniquely like as too</p>	<p>moreover as well as together with of course likewise comparatively correspondingly similarly furthermore additionally</p>	<p>as a result under those circumstances in that case for this reason henceforth</p>	<p>for thus because the then hence</p>	<p>consequently therefore thereupon forthwith accordingly</p>
<p>in other words to put it differently for one thing as an illustration in this case for this reason to put it another way that is to say with attention to by all means</p>	<p>notably including like to be sure namely chiefly truly indeed certainly surely</p>	<p>in fact in general in particular in detail to demonstrate to emphasize to repeat to clarify to explain to enumerate</p>	<p>although this may be true in contrast different from of course ..., but on the other hand on the contrary at the same time in spite of even so / though be that as it may then again above all in reality after all</p>	<p>but (and) still unlike or (and) yet while albeit besides as much as even though</p>	<p>although instead whereas despite conversely otherwise however rather nevertheless nonetheless regardless notwithstanding</p>
<p>important to realize another key point first thing to remember most compelling evidence must be remembered point often overlooked on the negative side on the positives side</p>	<p>markedly especially specifically expressively surprisingly frequently significantly</p>	<p>in the event that granted (that) as / so long as on (the) condition (that) for the purpose of with this intention with this in mind in the hope that to the end that for fear that in order to seeing / being that in view of</p>	<p>Effect / Result / Consequence</p>	<p>Effect / Result / Consequence</p>	<p>Effect / Result / Consequence</p>
<p>Examples / Support / Emphasis</p>	<p>Cause / Condition / Purpose</p>	<p>Opposition / Limitation / Contradiction</p>	<p>Effect / Result / Consequence</p>	<p>Effect / Result / Consequence</p>	<p>Cause / Condition / Purpose</p>

Linking Words - A complete list of Transition Words & Conjunctions also called Cohesive Devices - Connecting Words

<p>Space / Location / Place</p> <p>in the middle to the left/right in front of on this side in the distance here and there in the foreground in the background in the center of</p> <p>adjacent to opposite to</p>	<p>here there next where from over near above below down up under between</p>	<p>as can be seen generally speaking in the final analysis all things considered as shown above in the long run given these points as has been noted in a word for the most part</p>	<p>after all in fact in summary in conclusion in short in brief in essence to summarize on balance altogether</p>	<p>overall ordinarily usually by and large to sum up on the whole in any event in either case all in all</p>
<p>Time / Chronology / Sequence</p> <p>at the present time from time to time sooner or later at the same time up to the present time to begin with in due time until now as soon as as long as in the meantime in a moment without delay in the first place all of a sudden at this instant</p> <p>immediately quickly finally</p>	<p>further beyond nearby wherever around before alongside amid among beneath beside behind across</p> <p>henceforth whenever eventually meanwhile further during first, second in time prior to forthwith straightaway</p> <p>by the time whenever</p> <p>instantly presently occasionally</p>	<p>Conclusion / Summary / Restatement</p> <p>than rather than whether as much as whereas</p> <p>though although even though while</p> <p>if only if unless provided that assuming that even if in case (that) lest</p> <p>as . . . as just as . . . so both . . . and hardly . . . when scarcely . . . when</p> <p>F A N B O Y S</p>	<p>Conjunctions</p> <p>Comparison That what whatever which whichever</p> <p>Concession Who whoever whom whomever whose</p> <p>Condition where wherever</p> <p>Place wherever</p> <p>Rel.Pro. after as long as as soon as before by the time now that once since till until when whenever while</p> <p>Time</p>	<p>Reason because since so that in order (that) why</p> <p>Manner how as though as if</p> <p>either . . . or neither . . . nor if . . . then not . . . but</p> <p>B O R O R</p> <p>But Or Yet So</p>
Subordinating				
Correlative				
Coordinating				



DOUGLAS FIR SCIENCE ILLUSTRATION SKETCH

Nature-based Art Activity

Before there were cameras, scientists would sketch their observations in the field. Students can practice doing the same in this quick, hands-on activity that invites them to closely observe the unique characteristics of a Douglas fir.

Students will...

- Reinforce plant identification knowledge.
- Create a science illustration of a Douglas fir tree's pinecone and needles.
- Heighten observation skills by focusing on the details, shapes, and proportions of the subject.

Pre-Activity Education:

No prior education is necessary, however this activity would nicely complement any prior lessons on identifying Douglas firs.

Setting:

Outdoors or indoors

Grade Level:

Suggested for Grades 5-8

Timing:

15-30 minutes

Materials:

- Pencil with eraser
- Exhibit A: Douglas Fir Sketch

Sources:

Denniston, Ken. "Douglas Fir - Pseudotsuga Menziesii." *Douglas Fir*, 2011. nwconifers.com/nwlo/douglas-fir.htm.



INSTRUCTIONS FOR STUDENTS

Introduction to Field Sketching (5-10 minutes)

Introduce the topic. Explain to your students we are all going to make scientific illustration, or field sketch, of the pinecone and needles of a Douglas fir tree.

Challenge students to think of how field sketches can be a useful tools for scientists. Explain how before there were cameras, scientists would sketch plants and animals to document details about their observations.

Explain to students that the purpose of our sketches is to accurately observe and record data and that our artistic ability is a skill that we can improve over time with practice.

Time to Draw! (10-20 minutes)

Sketching. Ask students to flip to the page in their field journal with the Douglas fir sketch (Exhibit A handout) and to pull out a pencil. If outdoors, ask your students to go identify a Douglas fir tree and find a pinecone that they can sketch.

Whether using a real Douglas fir pinecone or using the picture in "Exhibit A," ask students to do the best they can to illustrate their pinecone in the provided space. Ask them to pay close attention to the size proportion and the lightness and darkness (known as *tones*) of the shapes that they see, which can be important clues used to help us identify a Douglas fir tree. Instruct students to include notes beside their sketch, such as the approximate size, texture, or color of the pinecone--any detail that would help someone else identify the plant.

Ask students to do the same for the pine needles on the branch of a Douglas fir.

If some students finish early, see if you can suggest adding some detail like shading to show shadows. Or, you can ask them to sketch the tree, or to flip the page and try to re-draw the pinecone from memory.

TEACHER TIPS

"For nature art to work its observational magic, students need to know that the goal of such drawing is not to make pretty pictures, but instead to accurately observe and record data. If the goal is to make pretty drawings, it can get in the way of documenting observations because of one's inner critic or memories of dismissive comments about one's ability to do art--true for adults, too. 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.' As a result, students do draw and their artistic ability improves with the practice--it's a skill, not a gift per se."

From "Opening the World Through Nature Journaling," by Emily Breunig and John Muir Laws.

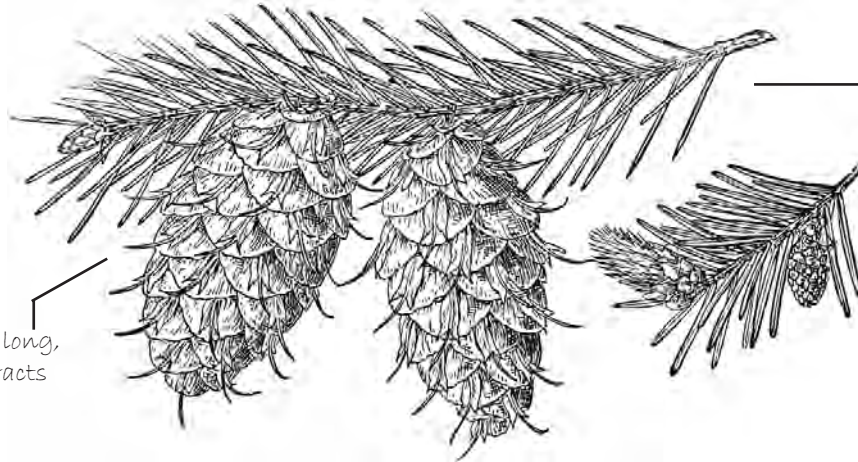


EXHIBIT A: DOUGLAS FIR SKETCH

Douglas Fir Example Sketch

Bark: Bark:
Gray or brown,
deep furrows

Cones: 3-4" long,
3-pointed bracts



Needles: 1" long,
soft points, all
around twig

Your Sketch Below



HONORING OUR RIVERS

DECOMPOSITION OF A POEM

Poetry Writing Activity Related to Decomposition of Organic Matter

Students log questions about decomposition as they are learning about it. By the end of the lesson, students will turn these questions into a poem that mimics the process of decomposition!

Students will...

- Develop questions and reinforce what they've learned about the process of decomposition of organic matter.
- Learn about the function of form in poetry.
- Learn how to use repetition as a literary device.

Pre-Activity Education:

This writing exercise is designed to complement a lesson about decomposition. Have students complete the pre-lesson setup portion of this exercise prior to learning about decomposition, and then continue with the poetry exercise.

Setting:

Outdoors or indoors

Grade Level:

Suggested for Grades 5-8

Timing:

25-40 minutes

Materials:

- Paper or a blank page in a field journal
- Writing utensil
- Exhibit A: Anatomy of a Poem
- Exhibit B: Example Poem

Modifications:

This exercise can be adapted for any unit in which a poem's form can reflect the subject. For example, a unit on symbiotic relationships, like that between alga and fungus to form a lichen. For a poem about symbiosis, the form might be couplets (stanzas of two lines) to reflect the codependent relationship between the two organisms. Or, for a unit about rivers, the poem could look like the shape of a river.

Sources:

"Glossary." *Form*, Poetry Archive, www.poetryarchive.org/glossary/form.



INSTRUCTIONS FOR STUDENTS

Pre-Decomposition Lesson Setup (5-10 minutes)

Before beginning your lesson on decomposition, instruct students to write the following on a blank page:

- I wonder what....
- I wonder where...
- I wonder when...
- I wonder why...
- I wonder how...
- I discovered...

Ask students to complete these statements as they are learning about the process of decomposition. We will use them for this poetry writing exercise.

Introduction to Repetition and Form (10 minutes)

Introduce the topic. Explain to students that *repetition* is a literary device that repeats the same word, phrase or sentence multiple times to make an idea more clear, more memorable, or to emphasize its significance. Repetition also creates rhythm when the poem is read out loud. Sometimes a break in repetition creates emphasis on the changed word or phrase.

Ask the students what was being repeated from the list of statements above, and where was there a break in the repetition? (*Answer: "I wonder" is repeated and "I discovered" is the break in the repetition.*)

Explain to the students that *form* is the shape or structure of a poem. Form can contribute to the meaning of the poem.

Show the students "Exhibit A: Anatomy of a Poem" to introduce poetry terms. Cover the following points:

- Poems are made up of lines and *stanzas*.
- *Stanzas* are groups of lines.
- Where a line ends is called a *line break*. You can create *line breaks* in the middle of a sentence (called *enjambment*) or at the end of definite punctuation marks, like a period or colon (*end-stop lines*).
- Lines can be short or long, and *stanzas* can be made up of different numbers of lines.

TEACHER TIPS

This can also be done after a lesson on decomposition. Change "I wonder..." to the past tense, "I wondered..." Give the students 5-10 minutes to reflect and complete the statements.

Repetition is a literary device that repeats the same words or phrases a few times to make an idea clearer and more memorable. As a rhetorical device, it could be a word, a phrase, or a full sentence, or a poetical line repeated to emphasize its significance in the entire text.

Form, in poetry, can be understood as the physical structure of the poem: the length of the lines, their rhythms, their system of rhymes and repetition.



TEACHER TIPS

Commend student suggestions that demonstrate an understanding of decomposition facts.

INSTRUCTIONS FOR STUDENTS

Poetry Writing Instructions (10-20 minutes)

Introduce the activity. Tell students that we are going to write a poem using the “I wonder” statements with a form that mimics the process of decomposition.

Remind students that decomposition is when things that used to be alive are broken down into smaller, simpler forms of matter, such as carbon dioxide, water, nutrients, and organic matter.

Challenge the students to suggest ideas of how the form of the poem could look like the process of decomposition.

Tell students, “Just as things are broken down into smaller parts in decomposition, we are going to break down the lines of our ‘I wonder’ statements until the last line is only one or two words. So, the first line of your poem should be the longest in length, and every line after that shorter in length.”

Show “Exhibit B: Example Poem” so students can visualize the form.

Allow students to form their poems. Remind them to give their poem a title. If they are struggling with a title, they can title the poem, “Decomposition.”

When students are done, discuss how their poem’s form (the lines getting shorter and simpler) reflects the subject of the poem.



EXHIBIT A: ANATOMY OF A POEM

Our Precious Water

By Murphy Bridget (Grade 4)

Our precious water _____
tumbling from the sky,
slowly seeping in the ground
and sliding down the hillside.

One *line* of a poem. There is a *line break* after the word “water.”

Our precious water
joining tiny streams,
following the flow
to very soon grow.

End-stop line break. The line breaks at the period.

Our precious water
passing many fish
as they try to swim _____
against their dangerously strong currents.

Enjambment line break. The line breaks in the middle of the sentence.

Our precious water
crashing over rocks,
diving, turning, and churning,
making feared white rapids.

Poem takes the form of its subject, a river.

Our precious water
splashing into the ocean,
filled with many colors,
and squid, whales, and fish.

Repetition of “Our precious water” in bold text.

Our precious water
floating into garbage,
turning from clear pure blue
into brown, mucky, yuck.

_____ This poem is one *stanza*.

Our precious water
polluted by us,
but nobody notices
it could affect us.



EXHIBIT B: EXAMPLE POEM

Decomposition

I wonder what organisms help matter break down.
I wonder where all the matter has gone.
I wonder when the process speeds up
and slows down. I wonder why fungi
grow outwards in circular patterns.
I wonder how a leaf becomes
soil. I discovered
decomposition.



HONORING OUR RIVERS

OUTDOOR SCHOOL COMIC STRIP

Art and Writing Activity for Recreation

Students record the sequences of an observation or experience from the day or week at camp by constructing a comic book-like series. A playful and fun activity!

Students will...

- Record data in a fun, creative and playful way.
- Practice narrative storytelling principles.
- Elicit creative thinking through storytelling.

Pre-Activity Education:

No prior education is necessary.

Grade Level:

Suggested for Grades 5-8

Setting:

Outdoors or indoors, though preferably somewhere where students have a flat surface to draw on.

Timing:

30-45 minutes

Materials:

- Paper
- Pencil with eraser
- Pen
- Ruler
- (Optional) Color pencils, crayons or markers

Sources:

Corley, Michael. "How to Create a Comic Strip With Your Kids in 7 Easy Steps |" *My Kids' Adventures*, 12 Feb. 2014, www.mykidsadventures.com/create-comic-strip-kids/.

INSTRUCTIONS FOR STUDENTS

Brainstorming Comic Strip (15-20 minutes)

Introduce the topic. Explain to your students they are going to create a comic strip about either something they observed or experienced at outdoor school.

Find inspiration for the comic strip. Have students think about something they learned, something interesting they saw, or something fun or funny that happened during outdoor school. Who were the characters? What is the setting? Think about the series of events. What happens in the beginning, middle and end?

Practice sketching your characters on a scrap piece of paper. The trick is to make them look different from each other so that they are easy to tell apart in the comic strip.

Draft your story. Think about what will happen in each panel, or box. The panels represent a different moment in time. How many panels do you need to write your story? Can you write it in three (introduction, build up, punchline)? Do you need five panels? Write what will happen in each one, including the dialogue of your characters.

Building the Comic Strip (15-25 minutes)

Draw a border. Use a ruler and a new piece of paper to create the panels (squares or rectangles) and a border around each one.

Write out the words or dialogue towards the top one-third of each panel.

Sketch the scene in the bottom two-thirds of each panel. Remind students that these are supposed to be silly and don't need to be realistic illustrations.

Next, draw word balloons around the text. Be sure to include a "tail" going to the appropriate character to indicate who is speaking.

When you're ready, you can retrace everything in a pen to darken the lines and add color!



HONORING OUR RIVERS

EXHIBIT A: EXAMPLE COMIC STRIP





HONORING OUR RIVERS

AFTER THE FIRE

Outdoor Poetry Writing Activity Related to Fire Ecology

After learning about fire ecology, students make observations at a burn site for “clues” or “evidence” of how their surrounding environment has been affected by a previous fire. Students do a freewriting exercise about the details of these clues before writing a short free verse poem with emphasis on creating imagery.

Students will...

- Learn to pay close attention to the details of their observations of the environment.
- Extrapolate a hypothesis about the effects of fire on the ecosystem based on their observations.
- Elicit creative thinking through freewriting
- Learn about literary devices, such as imagery, metaphor, and simile.
- Learn from each other that we can all see the same subject differently

Pre-Activity Education:

It is recommended that students learn about fire ecology prior to this exercise so that they can draw conclusions about how the local area has been affected by fire based on their observations.

Setting:

Anywhere you can circle the group comfortably for a discussion with evidence of a past burn, such as burnt tree stumps.

Grade Level:

Suggested for Grades 5-8

Timing:

25-55 minutes

Materials:

- Paper or a blank page in a field journal
- Writing utensil
- Exhibit A: Example of Poem
- Exhibit B: Definitions of Literary Devices

Sources:

“Literary Terms.” *Literary Devices*, 2010, literary-devices.com/.



INSTRUCTIONS FOR STUDENTS

TEACHER TIPS

Introduction to Imagery, Metaphor, and Simile (5-10 minutes)

Introduce the topic. Gather students near a burn site where there is evidence that a fire once occurred (*ie, burnt stumps*). Tell them that we are going to do a poetry writing exercise about what how fire has affected our environment based on our observations. And, we're going to dive into the *imagery* of our observations.

Ask the group, "Does anyone know what is *imagery* in writing?" After listening to the responses, explain that imagery helps a reader visualize what is written. Imagery uses words and phrases to create mental pictures for a reader. You can create good imagery when you write by imagining you are the readers' eyes (sight), ears (hearing), nose (smell), and skin (touch).

Ask the group, "Does anyone know the meaning of *metaphor* and *simile*?" After listening to the responses, explain that metaphors and similes are used in writing to compare similarities between two different subjects. For example, comparing the sound a dry leaf makes when it's stepped on to the sound of crushing potato chips. If we know what it sounds like when a chip is crushed, then we have a better mental image of what it must sound like to step on the leaves. Explain that metaphors and similes help create good imagery because it is easier for us to picture something in our minds when it is compared to something we're already familiar with.

Ask the group for an observation about the surrounding environment and demonstrate how students can dig deeper into the imagery of their observations by asking follow-up questions about the details.

Example:

Teacher: "Look around you. Make an observation about the surrounding forest. What is the first thing you notice?"

Student: "The bottom of the trees are blackish."

Teacher: "Okay, now if we're going to help our reader visualize what we're seeing, what else can we say about the black on the bottom of the tree? What can we compare the color to? What other things have a similar blackness? What does the rest of the tree look like? Does it look alive?"



TEACHER TIPS

If you do not have much time, you can shorten or skip this group exercise.

Remind students that we can use our senses to pay closer attention to the details of our environment. These details are what make good imagery.

INSTRUCTIONS FOR STUDENTS

Why or why not? What about what we're hearing? What does the noise sound like? Or if it's silent, what's an adjective you might use to describe the quality of the silence (ie, peaceful, frightening)? What are other things you could compare that sound to? Etc..

Time permitting, have the full group practice making similes that compare something they see in the environment to something else using the five senses:

1. _____ looks like _____
2. _____ sounds like _____
3. _____ feels like _____
4. _____ smells like _____
5. _____ tastes like _____

Silent Freewriting (5-10 minutes)

Ask the students to pull out their writing utensils and paper and to find a seat nearby. Tell students that their job will be to write as many details about the scene around them as possible during five minutes of silence (so that they can listen to their surroundings). Ask students to look around for clues of how the environment has responded to fire. Does anything look damaged? What seems to be thriving? They will use these notes to help them write a poem.

Explain that they will be *freewriting*. Explain the meaning of *freewriting* as a pre-writing technique that captures the uninterrupted flow of our thoughts and ideas. It's when we write down everything that comes to our minds even if it doesn't make much sense in the moment, like a dream. The goal is to never let your pencil or pen stop moving. Tell students not to worry about spelling, punctuation, or whether the writing is "good." What's most important is to keep writing, even if you have to write, "I am trying to think of what else I can say." If students get stuck, they can also change their point-of-view by looking somewhere new (*ie, behind, down, etc*) and write the first thing they notice. The purpose of *freewriting* is to help writers overcome self-criticism and the feeling of getting "stuck."

Set timer for five minutes and tell students to begin.



INSTRUCTIONS FOR STUDENTS

During the five minutes, remind students to focus on their sensory observations, to use adjectives when writing, and to pay attention to the characteristics of the different plants and animals they see. For example, it's not just a sparrow, but a sparrow with auburn wings flying through the filtered sunlight of the towering trees.

After 5 minutes, tell you students time is up and to stop writing.

Introducing Free Verse Poetry (15-20 minutes)

Tell your students that everyone is going to write a short *free verse* poem using the words and phrases they jotted down during the freewriting exercise.

Ask the group if anyone wants to share what they think a *free verse* poem is. Explain to the students that a free verse poem is a poem that is free from the normal rules of poetry and doesn't have a rhyming pattern. A free verse poem can be made up of sentences that are broken up on the page (*line breaks*) to convey meaning to the reader. For the purpose of this exercise, we won't worry too much about how we break up the lines, however, explain that it is the poet's choice where to break up sentences into new lines, and that generally it is best to put conjunctions, like "and" and "but," at the beginning of a new line. Also, typically you only capitalize the first word in a sentence (rather than the first word of each new line), just like when you're writing a paragraph.

Show the group a picture of what a poem might look like using the example poem in Exhibit A. Read the poem. Point out how the poem breaks up the sentences into new lines.

Ask the group to write "After the Fire" as the title of their poem.

Ask them to choose their favorite image or images from their freewriting notes and to form them into a poem. It's okay to rephrase the details or to add new concepts and words to the poem. These should be complete thoughts, like sentences, only broken up into different lines.

TEACHER TIPS

It may be helpful to prompt students with the clues you see about the regeneration of life in a forest after a fire. For example, "Do you notice any new growth in the forest? Do you see any wildlife living in the standing, dead trees?"

This will be a high-level introduction to *free verse* poetry and will not dive deeply into how the form (ie, *line breaks* and *stanzas*), the sounds of words, the rhythm, the punctuation, and other elements convey meaning.



TEACHER TIPS

Anthropomorphism is a literary device that lends a human quality, emotion or ambition to a non-human object or being.

Refer to students as the authors of their poems rather than by the student's name. This helps the group speak more objectively about the poetry and makes constructive criticism less personal.

Positively reinforce students who are willing to share their poems by saying "thank you for sharing" and commending them for examples of descriptive language, uses of literary devices, like imagery, simile, metaphor, etc., and/or their keen observations and reasoning regarding fire ecology concepts.

INSTRUCTIONS FOR STUDENTS

The last sentence of their poem should be a hypothesis, or statement, about what their observations indicate about how the landscape has responded to fire. Tell students to use "after the fire" somewhere in their last line.

Example: "Now I see..." or "I realize..." Or, perhaps students write the last sentence from the perspective of the forest. What would the forest say about the fire? "If the forest (or wildlife) could speak, it would say..." It's okay to bring the forest alive like a human character with emotions: "The forest is relieved the fire has come."

Give the students 10-15 minutes to write their own poem.

(Optional) Sharing and Literary Device Learning (5-15 minutes)

To wrap up the activity, ask if anyone is willing to share what they've written. Ask the group...

- What were examples of *imagery* that helped you visualize what the author was describing in the poem? Practice using the word *imagery* to reinforce this new term.
- If they noticed any literary devices (imagery, metaphor, simile, alliteration, personification, anthropomorphism). Pause to explain what some of these literary devices are when they come up.
- If anyone noticed or wrote about the same thing.

Continue sharing poems as time permits.

EXHIBIT A: EXAMPLE OF POEM

After the Fire _____ Title

A quiet forest stands scarred _____ *Personification* (human quality)

with the black markings of a time

once scorched. In the silence,

all I can hear is the flit and flight _____

Alliteration (repetition of similar sounds)

of small, swift birds coming in and out

of the homes they've made in dead

standing snags. A bright green

vegetation covers the ground,

a blanket of life. /

Metaphor (comparing vegetation to a blanket). If the author had written, "like a blanket of life," it would have been a *simile*.

Now I see the rebirth after the fire. _____

Last sentence draws a connection between the evidence of the fire and its effects on the forest.

Poem is made up of **one stanza**.

Three examples of *imagery*: 1) black markings on trees, 2) birds flying from snags, and 3) vegetation on floor of forest.

EXHIBIT B: DEFINITIONS OF LITERARY DEVICES

Alliteration

Alliteration uses words in quick succession and begin with letters belonging to the same sound group. Whether it is the consonant sound or a specific vowel group, the alliteration involves creating a repetition of similar sounds in the sentence. Alliterations are also created when the words all begin with the same letter. Alliterations are used to add character to the writing and often add an element of 'fun' to the piece.

Example: The Wicked Witch of the West went her own way. (The 'W' sound is highlighted and repeated throughout the sentence.)

Anthropomorphism

Anthropomorphism can be understood to be the act of lending a human quality, emotion or ambition to a non-human object or being. This act of lending a human element to a non-human subject is often employed in order to endear the latter to the readers or audience and increase the level of relativity between the two while also lending character to the subject.

Example: The raging storm brought with it howling winds and fierce lightning as the residents of the village looked up at the angry skies in alarm.

Imagery

Imagery is the use of words and phrases to create "mental images" for the reader. Imagery helps the reader to visualize more realistically the author's writings. The usage of metaphors, allusions, descriptive words and similes amongst other literary forms in order to "tickle" and awaken the readers' sensory perceptions is referred to as imagery. Imagery is not limited to only visual sensations, but also refers to igniting kinesthetic, olfactory, tactile, gustatory, thermal and auditory sensations as well.

Example: The gushing brook stole its way down the lush green mountains, dotted with tiny flowers in a riot of colors and trees coming alive with gaily chirping birds.

Metaphor

Metaphors refer to a meaning or identity ascribed to one subject by way of another. In a metaphor, one subject is implied to be another so as to draw a comparison between their similarities and shared traits. The first subject, which is the focus of the sentences is usually compared to the second subject, which is used to convey a degree of meaning that is used to characterize the first. The purpose of using a metaphor is to take an identity or concept that we understand clearly (second subject) and use it to better understand the lesser known element (the first subject).

Example: "Henry was a lion on the battlefield". This sentence suggests that Henry fought so valiantly and bravely that he embodied all the personality traits we attribute to the ferocious animal. This sentence implies immediately that Henry was courageous and fearless, much like the King of the Jungle.

Personification

Personification refers to the practice of attaching human traits and characteristics with inanimate objects, phenomena and animals.

Example: The raging winds

*** You might be thinking that personification sounds a lot like anthropomorphism –and you're right. But here's the difference: with anthropomorphism, the object or animal is actually doing something human; with personification, the object or animal just seems like it's doing something human.*












Simile

Similes are one of the most commonly used literary devices; referring to the practice of drawing parallels or comparisons between two unrelated and dissimilar things, people, beings, places and concepts. By using similes the reader is able to better understand the sentiment the author wishes to convey. Similes are marked by the use of the words 'as' or 'such as' or 'like'.

Example: He is like a mouse in front of the teacher.

The VISUAL ALPHABET

These are the building blocks of every visual.
With these elements, you can draw anything!

 POINT	 LINE
 ANGLE	 ARCH
 SPIRAL	 LOOP
 CIRCLE	 OVAL
 TRIANGLE	 SQUARE
 POLYGON	 CLOUD

PEOPLE

① START WITH THE BODY



② ADD ARMS & LEGS AT THE CORNERS



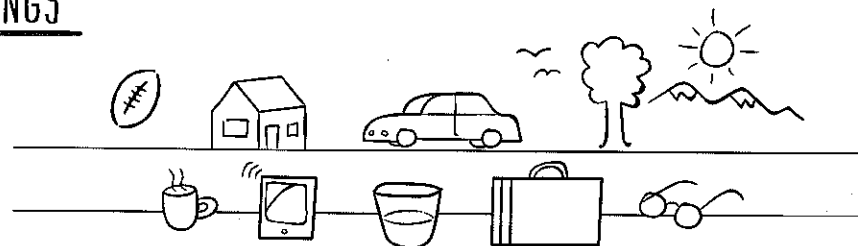
③ ADD HEAD, HANDS & FEET



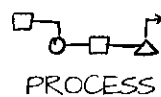
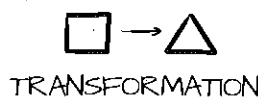
④ ADD NOSE (FOR DIRECTION) & OTHER DETAILS



THINGS



IDEAS



FRAMES

