

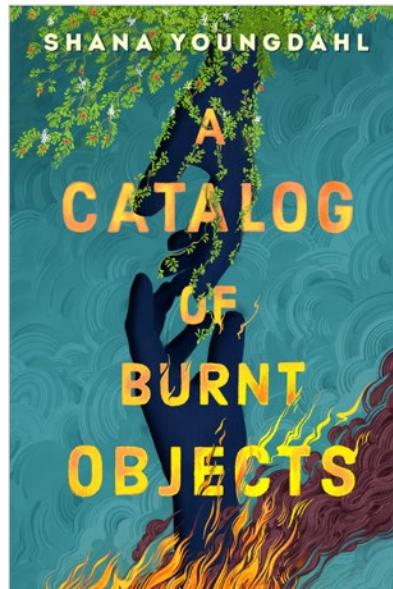
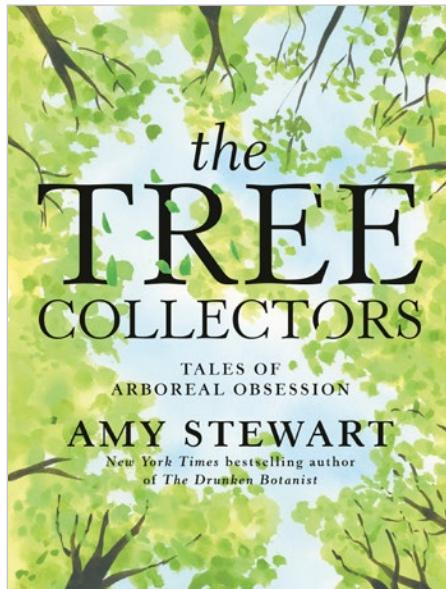
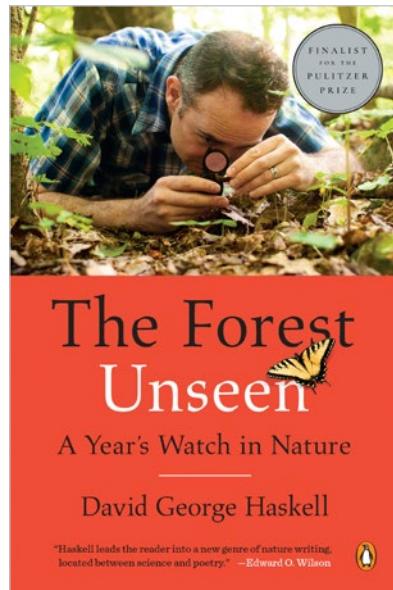
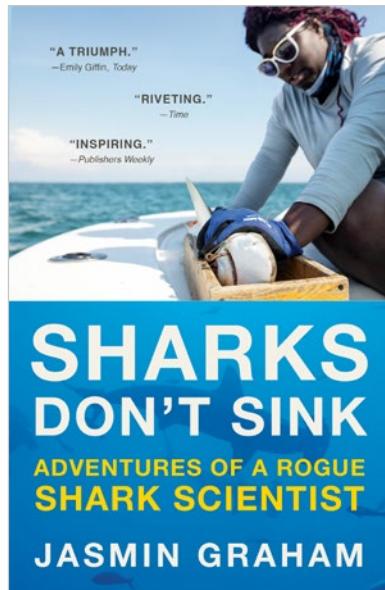
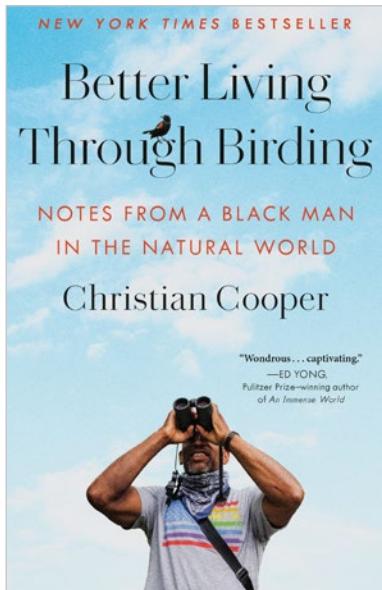


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THEMATIC GUIDE

Teaching Nature HIGH SCHOOL



This guide encourages high school students to cultivate a sense of responsibility for nature and the world around them through reading, writing, and collaborative interdisciplinary projects.

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■ INTRODUCTION

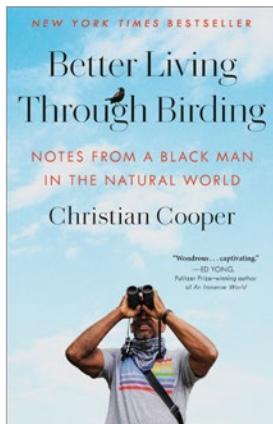
Author and environmental activist Richard Louv is credited with originating the term nature-deficit disorder in 2008 to describe the loss that children experience when they are not given the opportunity to have direct contact with nature. After spending many years with students and teachers, Louv realized the impact that nature had on children's health and ability to learn; as a result, he began to press teachers and educators to help students engage with nature in school. The onslaught of standardized testing, the pandemic, and a focus on digital curriculum has made this difficult, as schools pressure teachers to prepare students for tests rather than spend time outdoors. Research done by parents groups, like the National PTA, has shown that one way schools have found more time for academics is by cutting recess and physical education. Time spent outdoors has suffered as a result. Packed schedules after school, rigorous homework, and extracurricular activities keep my students, and teens across the country, bound to their computers and phones instead of outside after school. Students who do not spend time outdoors engaging in exploration and play often feel disconnected from nature and environmental issues as adults. Without that connection to nature, there may be no conservationists in the future.

Nature writing was a vital aspect of American school curricula from the nineteenth century until the late-twentieth century. Creating a sense of place through first-hand experiences combined with learning from fiction and nonfiction books helps people feel more connected with the environment. High school English teachers have a unique opportunity, through reading, writing, and collaborative interdisciplinary projects, to help teens cultivate a sense of responsibility for nature and the world around them. Whether you teach in the city or suburbs, rural or urban areas, getting students outside benefits them and the planet.

■ HOW TO USE THIS GUIDE

The titles in this collection include fiction and nonfiction texts. The collection's varied genres provide a broad appeal for today's high school students; the wide variety of texts also allows for teachers in many subject areas to integrate whole texts or excerpts into their lesson plans. Conservation isn't just a science issue: all classes should address the value of nature and our environment. The selected texts can be used as whole-class reads, book club choices, and/or independent reading. Excerpts can also be used for whole-class lessons and as mentor texts. Teachers can choose to select individual or multiple texts depending on reading level, thematic consideration, and instructional goals. Essential questions are provided to frame the study of these complex texts, and the included questions can serve as conversation starters or writing prompts. The activities outlined apply to all texts and can be adapted to whole-class or small-group settings such as seminars, literature circles, debates, and whole-class discussions.

■ ABOUT THE TITLES IN THIS COLLECTION



Better Living Through Birding

Notes from a Black Man in the Natural World

CHRISTIAN COOPER

9780593242407

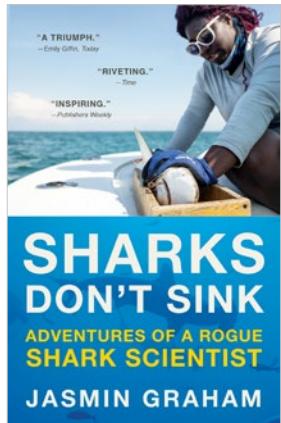
Random House Trade Paperbacks | Paperback | \$19.00 | 304 pages | Also available: E-BOOK, AUDIO DOWNLOAD

Christian Cooper is a birder who spends hundreds of hours each year observing the migratory birds that stop to rest in Central Park. While birding in the park one morning in May 2020, early in the pandemic, he had an encounter with a woman who had allowed her dog to roam off-leash in an area of the park where that was forbidden in order to protect the landscape. The woman's cruel and racist reaction was caught on video and quickly went viral. In his memoir *Better Living Through Birding*, Christian Cooper recounts his life up through the confrontation in Central Park and shows how his birding

hobby has changed his life in more ways than one.

- The subtitle of the book is "Notes from a Black Man in the Natural World." What does this mean? What do you know about the access minorities have had to the natural world in the United States throughout history?
- Cooper's book is an invitation to pay attention to what is around us. Take a few minutes to listen to and look at the world around you. Do you notice birds? Insects? Plants? What do we see every day without seeing?
- There are "Birding Tips" sprinkled throughout the book. Did you notice these? What function do you think they serve for the reader? For the writer?
- Do you think the title of the memoir fits the story? Why or why not?

■ ABOUT THE TITLES IN THIS COLLECTION



Sharks Don't Sink

Adventures of a Rogue Shark Scientist

LYNNE KELLY

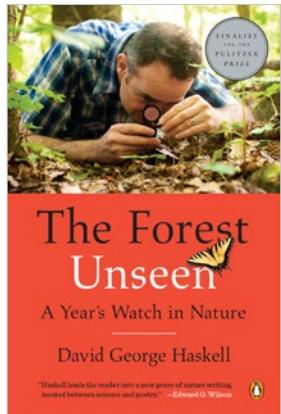
9780593685273

Vintage | Paperback | \$18.00 | 224 pages

Also available: E-Book, Audio Download

In *Sharks Don't Sink: Adventures of a Rogue Shark Scientist*, Jasmin Graham shares with readers her experience pursuing her passion for sharks. Along the way, she is forced to face sexism and racism in higher education, eventually choosing to pursue science outside the traditional walls of academia. Throughout the memoir, Graham compares how sharks are perceived by the general public to how BIPOC Americans are too often treated and perceived. Discuss the significance of this comparison.

- The subtitle describes Graham as a “rogue scientist.” What does she mean? Why does she adopt this moniker?
- The STEM field is overwhelmingly male and white. How does Graham’s experience with Dr. Minion illustrate some of the challenges women of color face in STEM?
- Does respect for natural environments have anything to do with the way people in a community respect or fail to respect each other?



The Forest Unseen

A Year's Watch in Nature

DAVID GEORGE HASKELL

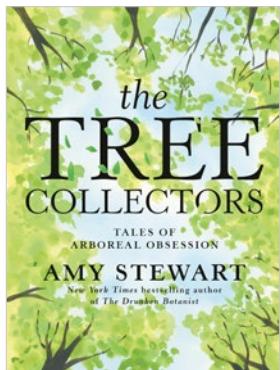
9780143122944

Penguin Books | Paperback | \$18.00 | 288 pages | Also available: E-Book, Audio Download

Dr. David George Haskell's *The Forest Unseen* is a collection of essays organized chronologically over the course of a year. Dr. Haskell adopted a single square meter of space in an old-growth forest in Tennessee and observed it almost daily for 365 days, writing about the spot in rain, snow, heat, and more.

- As of 1996, more than half of the earth's residents live in urban areas. Look around your town or city—is there a place you could adopt and observe like Dr. Haskell? What might it be like to observe the same small patch of grass or concrete for an entire year?
- In an interview with students at High Technology High School in 2012, Dr. Haskell advised the students, “Don’t go looking for a special place. Instead, find a place and make it special.” What is the difference between finding a special place and making a place special? How does Dr. Haskell do this in his book?
- *The Forest Unseen* makes the case that if humans want to fully understand the natural world we must combine the logic of science and the magic of poetry. Dr. Haskell combines these in his essays. What part of nature in your world would benefit from an essay like those Dr. Haskell wrote? Why?
- In the epilogue, Dr. Haskell writes “...watching ourselves and watching the world are not in opposition; I have come to see myself more clearly.” Why do we often feel more connected to ourselves when we spend time outside, disconnected from technology and responsibilities?

■ ABOUT THE TITLES IN THIS COLLECTION



The Tree Collectors

Tales of Arboreal Obsession

AMY STEWART

9780593446850

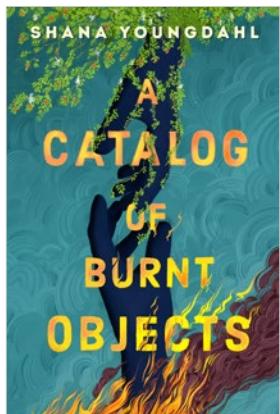
Random House | Hardcover | \$32.00 | 336 pages

Also available: E-BOOK, AUDIO DOWNLOAD

The Tree Collectors: Tales of Arboreal Obsession by Amy Stewart is a collection of 50 essays, with each essay

ocusing on a different person whose life has been deeply affected by trees. From scientists to community activists to artists, each vignette highlights one person's passion for trees.

- While it may seem impossible to collect trees (they are big, need a lot of space, and can be expensive), Stewart finds dozens of people who curate and collect trees and related items like seeds and pinecones. Stewart begins the book asking "What possesses someone to possess a tree?" How would you answer this question?
- Throughout the book, the collectors share the idea that collecting trees, spending time in nature, is powerful. How do you feel when you spend time outside? Are there particular places where you feel more connected to nature?
- Are you a collector? Do you (or did you) collect anything? What drew you to collecting and what do the items mean to you?
- "Biophilia" is a hypothesis proposed by naturalist E. O. Wilson stating that humans have an innate instinct to connect with nature and other living things. Do you agree with this hypothesis—why or why not?



A Catalog of Burnt Objects

SHANA YOUNGDAHL

9780593405512

Dial Books | Hardcover | \$19.99 | 368 pages | Lexile: HL620L

Also available: E-Book, Audio Download

A Catalog of Burnt Objects is an all-too-real fictional account of a wildfire in California. Shana Youngdahl was inspired to write this story after her hometown of Paradise was decimated by the 2018 Camp Fire.

- Each chapter opens with an object a townsperson lost in the fire, creating the "Catalog of Burnt Objects." Which object stood out to you the most? Why?
- What is the relationship between the characters and the environment when the book opens eight weeks before the fire? How do those relationships change during and after the fire?
- When Caprice begins building the app for tourists, she and her brother, Beckett, disagree about publicizing the best spots in Sierra versus protecting the town's environment from crowds of visitors. This push-and-pull between tourism and environmentalism is common—what are the ethical considerations surrounding tourism and the environment in the book and the real world?
- After the fires, some people don't want to rebuild in the area while others want to return home. We also see this with floods and other natural disasters. Should we take into account climate change in these situations? Should residents be allowed to rebuild in the same area after a natural disaster brought on by climate change?

BUILDING KNOWLEDGE

The books in this collection provide a gateway to the natural world for readers. While English curricula often introduce students to nature writing by writers like Thoreau, Emerson, and sometimes Dillard, it's rare that students have the opportunity to read contemporary nature writing. English teachers have a unique opportunity to help teens cultivate a sense of responsibility for nature and the world around them. Books and stories are ideal means of helping adolescents learn about the environment; the motifs, themes, and plots encourage critical thinking about social and environmental issues.

The following activities provide opportunities to build knowledge and capacity around the texts.

NATURE UNSEEN

Like Dr. Haskell in *The Forest Unseen* and the people profiled by Amy Stewart in *The Tree Collectors*, students can devote time to learning more about nature in their town or on their campus.

Have students adopt a square meter of space on campus and bring them to visit that space once per month for the rest of the school year. Students should bring a notebook and spend a few minutes observing their space during each visit. This could be done weekly, monthly, or even quarterly. Students can spend anywhere from ten minutes to an entire class period observing their mandala, taking notes or sketching what they see, hear, and feel. Sample activities are listed below:

- Each chapter of *The Forest Unseen* begins with an observation. Record two observations made during your time at the study site. Next, brainstorm lists of things that you could write about that were inspired by each particular observation. On a separate sheet of paper, sketch your mandala. Sit in silence for five minutes and draw what you see. Think about the weather, the ground, plants, insects, animal traces, shadows, etc.
- Visiting in the cold? In the essay titled “January 21st – The Experiment,” Dr. Haskell writes, “The wind gusts hard and the burning sensation in my skin surges. Then, a deeper pain starts...my body is failing after just a minute in this winter chill...” Compose a similar narrative paragraph describing how you felt in the cold. Include both biological and metaphorical details.
- Observe the birds near your observation spot. The Merlin app (merlin.allaboutbirds.org) is a great way to see and hear the birds around you! Make note of species and their habitat. Are there any man-made items that may have affected their habitat? Explain. How could their habitat be improved?
- The study of literature involves finding patterns—images, syntax, ideas—that interweave to support themes. Once we find these patterns, we make connections—what’s similar? Different? How and why are these patterns

■ BUILDING KNOWLEDGE

developed? Read Mary Oliver's "Starlings in Winter" and Pablo Neruda's "Lost in the forest...." Then, complete a dialectical journal comparing the texts.

- Adopt a tree. Visit it in different seasons. Write about it. Draw it. Research it.

* If possible, collaborate with other departments. For example, partnering with a biology or environmental science class could include students inventorying biotic and abiotic factors, measuring soil temperature and light, and other biological activities. Students can complete narrative writing, descriptive writing, eco-art, and presentations related to their space. Each visit should have a different assignment. My students have been rained on, sleeted on, and snowed on (my personal favorite!). We've seen the circle of life, complete with a dead deer carcass in one mandala and a fierce cardinal defending its turf in another. Spending time observing a small space over a long period of time helps my students feel more connected to the natural world that surrounds them every day.

TRY YOUR HAND AT BIRDWATCHING

Have students download the Merlin bird app (merlin.allaboutbirds.org). Once it's downloaded, head outside. Any place is fine, but you want to try to step away from the noise of highways, etc.

Instruct students to open the Sound ID feature inside Merlin. Hit the microphone button and allow the app to record for one to two minutes. Have students answer the following questions:

1. What birds does it record around you at this moment? List them below or take a screenshot and add it here.
2. Now that you know the birds are there, how many can you spot? Is it easy or difficult to spot the birds that Merlin heard? Why do you think that is? Challenge students to continue to look for birds in their schoolyard or neighborhood. For this activity, they can walk around or sit quietly for ten minutes. Either way, they want to look and listen for birds. This is a great opportunity to take notes (or create a nature journal page). They can continue to use the Merlin app to help you identify birds they see or hear.
3. As you watch birds, what are you noticing? What are you wondering?
4. How many birds did you see?
5. How many different kinds of birds did you see? Name some of the species you could identify.
6. What were the birds doing?
7. What surprised you during this activity? Explain.

■ BUILDING KNOWLEDGE

Finally, have students skim this article: prhlink.com/nytbirding. At the bottom, you will see a slideshow focused on how to draw a common American bird: the chickadee.

Mr. Sibley, the author of the popular Sibley field guides, said in a *Times* interview that the most important aspect of drawing a bird may be that it changes how you see. Try your hand at drawing a bird from life or from a photograph. You don't need to spend hours honing your illustrations (unless you want to). But understand that learning to do field sketching by closely observing aspects of the natural world is not just for fun. It is, as this article points out, "equal parts art and science," a tool used by researchers as well as artists.

MINORITY REPRESENTATION IN STEM

Jasmin Graham, author of *Sharks Don't Sink*, Christian Cooper, author of *Better Living Through Birding*, and Caprice, the main character in *A Catalog of Burnt Objects*, all address the issue of being underrepresented in STEM. There are significant gaps in outdoor experiences available to women and people of color. Help students learn more about representation and experiences in STEM through a written conversation.

Share at least two articles with students. Ideas listed below:

1. "STEM Jobs See Uneven Progress in Increasing Gender, Racial and Ethnic Diversity"
prhlink.com/stemjobs
2. "STEM's racial, ethnic and gender gaps are still strikingly large"
prhlink.com/stemgaps
3. "Nature Gap: Why Outdoor Spaces Lack Diversity and Inclusion"
prhlink.com/naturegap
4. "Birding While Black"
lithub.com/birding-while-black

Rules of Written Conversation:

1. Write legibly.
2. Cross out and go (no erasing).
3. Use all the time I give you. (No finishing before time is up. Keep writing.)
4. No talking!

■ BUILDING KNOWLEDGE**Written Conversation Instructions for Students:**

1. Read and Annotate
 - Read the articles.
 - Write your thoughts and questions in the margins.
2. First Response (5 minutes)
 - Write your thoughts about the articles on your paper.
 - Anything you would discuss out loud you can discuss in writing! Consider:
 - Have you noticed any race, ethnicity, or gender patterns or differences in who participates in outdoor activities in your life? What might explain these patterns?
 - Have you seen or experienced anything that supports or does not support the main idea(s) of the article(s)?
 - Did anything surprise you or challenge your beliefs?
 - In what ways might your own experiences with nature have been influenced by race, ethnicity, or gender expectations or stereotypes?
3. Pass and Respond (7 minutes)
 - Pass your paper to the left.
 - Read your classmate's response.
 - Write your thoughts below their response.
 - You can: comment, share a connection, ask a question, agree or disagree (with reasons).
4. Second Round (7 minutes)
 - Pass the paper left again.
 - Read both previous responses.
 - Write your response below.
5. Final Round (5 minutes)
 - Pass the paper to the left once more.
 - Read all responses.
 - Add your thoughts.
6. Review Your Original Paper
 - Read all the responses on your original paper.
 - Mark the most interesting comment or sentence.

■ THEMES

The following themes appear throughout the titles in this set. Essential questions are designed to be broad in the interest of capturing readers' attention, inviting multiple perspectives, and applying to big ideas across subject areas and units of learning. Conversation starters promote connection and relevance before and after students read.

CONSERVATION VS. PRESERVATION VS. ACTIVISM

Essential Question:

Should we focus on conservation of nature, preservation of nature, or activism in the twenty-first century?

Conversation Starters:

- When you hear the word “nature,” what do you think?
- What is the difference between conservation, preservation, and activism when we talk about the environment?
- Look around your town or city—does the local government seem to be focused on nature or the environment? How do you know?
- Should areas that deal with natural disasters like wildfires and flooding be allowed to rebuild? Why or why not?

ACCESS TO NATURE

Essential Question:

Who gets to experience and learn about the natural world, and who doesn't? What creates these differences?

Conversation Starters:

- If you don't have the opportunity to or don't enjoy spending time outdoors, why is that? How does it influence the way you feel about nature?
- How can we help young people, regardless of race, gender, and/or ethnicity, feel more connected to nature? Why is it important that they feel connected to the environment?
- What systemic barriers prevent some people from accessing nature?

SCIENCE COMMUNICATION

Essential Question:

Who has the responsibility to help people understand environmental issues?

Conversation Starters:

- Who has the responsibility to ensure that scientific understanding reaches underserved communities?
- How can you help younger students in your community connect with nature?
- Which characters or real people in the texts are responsible for being science communicators? Are they scientists, teachers, writers, or someone else?

■ THEMES**WONDER***Essential Question:*

How does wonder serve as a bridge between scientific understanding and emotional connection to nature?

Conversation Starters:

- What can we do as a society to get people to spend more time in nature?
- Rachel Carson once said, “If a child is to keep alive his inborn sense of wonder, he needs the companionship of at least one adult who can share it, rediscovering with him the joy, excitement, and mystery of the world we live in.” Do you think this is true? Why or why not?
- Do you ever spend time quietly observing something outdoors? Maybe you garden, or birdwatch, or maybe you love to watch the clouds or look at the stars. If so, how does this influence the way you feel about the environment?

■ WRITING ACTIVITIES**CULMINATING WRITING ASSESSMENT**

A writing assessment can provide students with a map for reading and analyzing texts. If introduced at the beginning of the unit, students use their notes and annotations to help them respond to the prompt. Writing prompts should encourage students to think critically and expand on relationships between texts. For example, students might respond to one of the following prompts:

- (Older/advanced writers): *While each book in this collection explores vastly different landscapes, all of the texts confront the human relationship with the natural world (e.g. power dynamics, invisibility/marginalization, resilience/ resistance). Analyze how ONE of the common elements is treated in two of the texts, highlighting the similarities or differences in the authors' perspectives.*
- (Younger/progressing writers): *All of the books we've read show people interacting with nature in different ways. Some common themes that appear across these texts include:*
 - *To protect nature, one must believe in and work towards positive environmental change.*
 - *Close attention to nature inspires awe and curiosity.*
 - *It's vital to translate the intricate details of natural science into language that resonates with the general public in order to foster conservation and wonder.*

Choose ONE of these themes and write an essay comparing how it appears in two of the texts we've read. In your essay, explain whether the authors have similar or different views on this theme.

■ WRITING ACTIVITIES

NATURE JOURNALS

Mary Oliver wrote that “Attention is the beginning of devotion.” Too often, we don’t spend time paying attention to the natural world. Take some time to slow down and observe an element in nature this week. Spend twenty minutes outside and observe anything from a bird to a blade of grass.

Nature journaling has been used for centuries by scientists and naturalists to record data, observations, and thoughts about the environment that they are exploring. Journaling is a gateway to the reflection of the world around us, and through this writing process, it forms the connection between people and place. Focusing on the great outdoors provides for a wide range of expression and active learning; whether drawing or writing observations, feel free to document discoveries and express your own thoughts. You should sit alone for this activity. Include the following, along with your sketches, ephemera, and/or observations:

- Date
- Place
- Time of day
- Weather conditions
- Any other important information—who you are with, special location or activity, your mood, etc.

ECO-ART

Research shows there is an ancient and intimate connection between language and landscape, a connection that is found in cultures around the world.

Exploring the natural world becomes a way to explore the origin of language and celebrate its use in modern life. Working with leaves, sticks, ice, snow, mud, stone, sand, or pine cones, students will use color, form, shape, light, shadow, and pattern to create ephemeral art. This can be done individually or in small groups.

Instructions for students:

Using natural materials you can find on-site (leaves, sticks, ice, snow, mud, stone, sand, pine cones, acorns, etc.) and using color, shape, light, pattern, and the landscape, you will create a piece of ephemeral art. Document your piece of art digitally.

1. Choose an area of land as your canvas.
2. Gather natural materials. You should not use any materials that are not natural and all materials must be found in the immediate area.
3. Create your artwork! The artwork will be ephemeral so it only has to last long enough to be documented in photos.
4. Take lots of photos! And document your experience in writing. Jot down words, phrases, and other descriptors that come to mind as you are working.

■ WRITING ACTIVITIES

5. Be sure to take at least one photo of your completed artwork. This should not include any humans! The photo must be able to be printed in a 5x7 format.

For homework, each student/group will be charged with creating an 11x17 PDF that includes at least one photo of their eco-art and a descriptive writing paragraph or poem. The text must use precise nouns and verbs to describe the ecosystem they used as the canvas and their eco-art. If this is an interdisciplinary project, students should be encouraged to use specialized biology vocabulary when appropriate (species names, etc.).

ENVIRONMENTAL MEMOIR

“A world is looking over my shoulder as I write these words; my censors are bobcats and mountains. I have a place from which to tell my stories. So do you, I expect. We sing the song of our home because we are animals, and an animal is no better or wiser or safer than its habitat and its food chain. Among the greatest of all gifts is to know our place.” – Barbara Kingsolver, “Knowing Our Place,” from *Small Wonder*

In this essay from her book *Small Wonder*, Barbara Kingsolver describes two places where she lives and writes: Appalachia and Arizona. She interacts with these two places, and while she may own land or be a part of a certain community, Kingsolver insists “These places own me.”

Think about the places that own you. What environment(s) has been significant to your development as a person? You may decide to write about the place you were raised, or you can choose some other environment that has impacted you. You may want to focus your essay on a particular event in order to frame your discussion.

Instructions for students:

1. Brainstorm a list of places that are important to you. These should be natural areas, but remember that nature can be found anywhere.
2. In your notebook, ask yourself a few questions:
 - What does this place look like? Smell like? Sound like? Feel like? Taste like?
 - How do you engage with this place?
 - How has this place shaped or affected you?
 - What sorts of plant and animal life exist there? What kind of non-living material?
 - Why is it important to you?
3. Draft your memoir. If possible, spend some time in your location and learn more about it.
4. Revise and edit.
5. Give your memoir a creative title.

■ OTHER TITLES OF INTEREST

Lies Like Wildfire by Jennifer Lynn Alvarez

Rachel Carson: Silent Spring & Other Writings on the Environment
by Rachel Carson

Slow Birding by Joan E. Strassmann

The Backyard Bird Chronicles by Amy Tan

An Immense World by Ed Yong

■ FILMS & DOCUMENTARIES OF INTEREST

Birders: The Central Park Effect (Tubi)

Castle in the Sky (HBO Max)

Flight of the Butterflies (Amazon Prime)

The Falconer (Amazon Prime)

Youth v Gov (Netflix)

■ ABOUT THE AUTHOR OF THIS GUIDE

Sarah Mulhern Gross is a high school English teacher and National Board Certified Teacher in Lincroft, New Jersey. She has an MAT degree in teaching biology from Project Dragonfly and Miami University. She is a contributor to *The New York Times Learning Network* and her writing has appeared in *Scientific American*, *ASCD*, *The New Jersey English Journal*, and *The Washington Post's Answer Sheet*. Sarah has presented for NCTE, NJCTE, NJCEL, NJEA, *The New York Times Learning Network*, Fordham University's Summer Literacy Institute, the Center for Teaching Excellence, and the New Jersey Science Teachers Association. She is the co-founder of #nerdcampNJ, NJCTE past vice-president, and past faculty board member for curiousSciencewriters, which provides a platform for publishing student science writing.

**Visit our website, PenguinRandomHouseEducation.com,
to browse more titles about nature.**



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