HUDSON
RIVER
MUSEUM

Naturalist's Journey Teaching Resource

Ages 4–11 (Pre-K–Grade 5)

Materials needed:

- Paper
- Pencil
- Markers, crayons, and/or colored pencils
- Your five senses: sight, smell, touch, hearing, and taste
- If available, a ruler, thermometer, magnifying glass, or other tools for measuring data
- Found materials in your home or natural specimens in the immediate outside environment

1 hour (includes three 20-minute activities and, if accessible and safe, visiting an outdoor space!)

Essential Questions:

- What is a naturalist?
- What is a naturalist's journal or notebook?
- How can we use our senses to gather information about our environments?
- What is data, and what are different ways we can represent data?

Image: Ellen Robbins (American, 1828–1905). *Ivy* (detail), mid-nineteenth century. Watercolor. Museum Purchase, 2010 (2010.09).

Part 1: Overview (Look & Listen)

Did you know that every day, you behave like a **scientist**? A basic part of being a scientist is observing what is around you. Close observation not only allows us to notice things that we understand, but also enables us to ask questions about what we don't understand and what we want to know more about.

Naturalists are scientific explorers who traditionally travel on foot or by boat from one place to another, making observations, collecting **data**, and discovering the **flora** (plant life) and **fauna** (animal life) of a particular **habitat**. Often, they are artists as well, sketching, drawing, and painting their observations and discoveries. In many ways, they also act as **environmentalists**, writing about and **advocating** to preserve the natural beauty and function of the **ecosystem** around them.

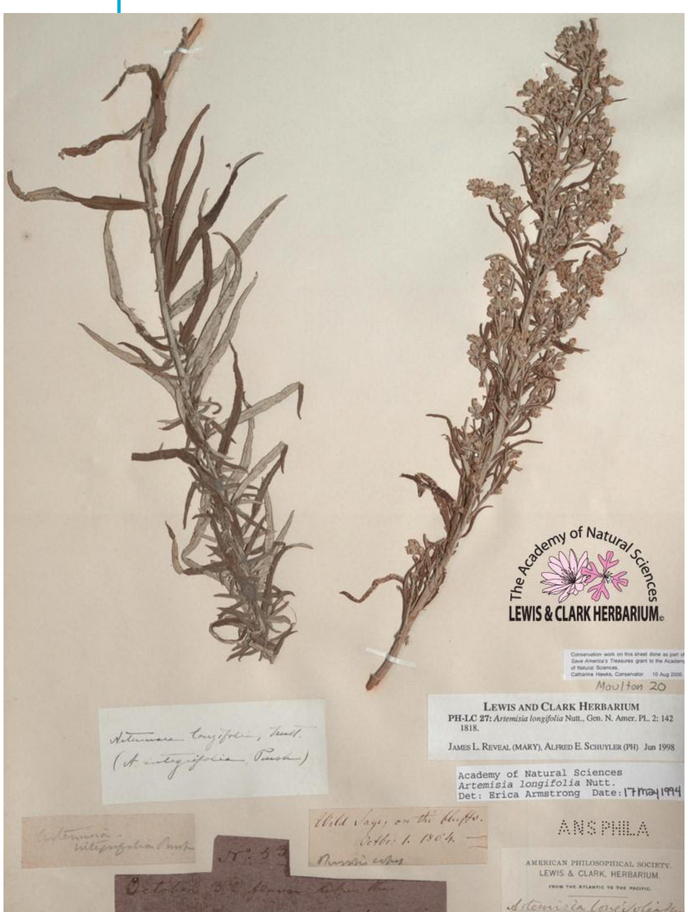
Sharpen your naturalist skills in the activities below, so that you are prepared for your next trip to the Hudson River Museum or to any environment that you love!

Look:

- Naturalist sketches from Lewis & Clark and Darwin (following pages)
- Images of artwork by Hudson River School artists from our collection:
  - *View of the Hudson Highlands with Woman Painting* by John Douglas
  - *Hudson River from Irvington* by Samuel Colman
  - *Bear Mountain Bridge* by Harry Wilks
  - *Mt. Hook* by Don Nice
  - *Map of the Frenglish Kingdom of Novum Eboracum (New York) (We All Got To Have a Place We Call Home)* by Frohawk Two Feathers
  - *Hudson River View (Sugar Factory at Yonkers)* by Daniel Brinley
  - *Ivy* by Ellen Robbins
- Images of artwork by contemporary artists:
  - Janelle Lynch
  - James McElhinney
  - Frances Hynes
- Hudson River Virtual Tour slides from New York State Department of Environmental Conservation

Listen: *My Dirty Stream (The Hudson River Song)* by Pete Seeger


The white salmon Trout which we had previously
seen only at the great falls of the Columbia has
now made it's appearance in the creeks near
this place. one of them was brought us to-
-day by an Indian who had just
taken it with his gig. this is a
likeness of it; it was 2 feet 8 Inches
long, and weighed 10 lbs.
are caught with the hook, nor do I know
on what they feed.


The Academy of Natural Sciences
LEWIS & CLARK HERBARIUM
LEWIS AND CLARK HERBARIUM
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JAMES L. REVEAL (MARY), ALFRED E. SCHUYLER (PH) Jun 1998
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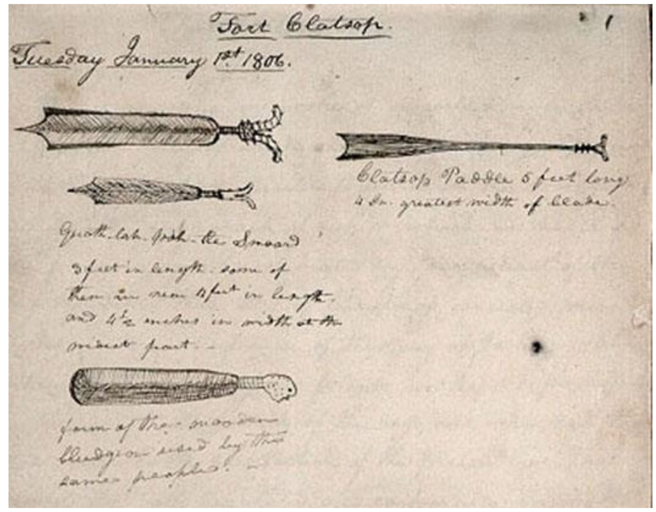
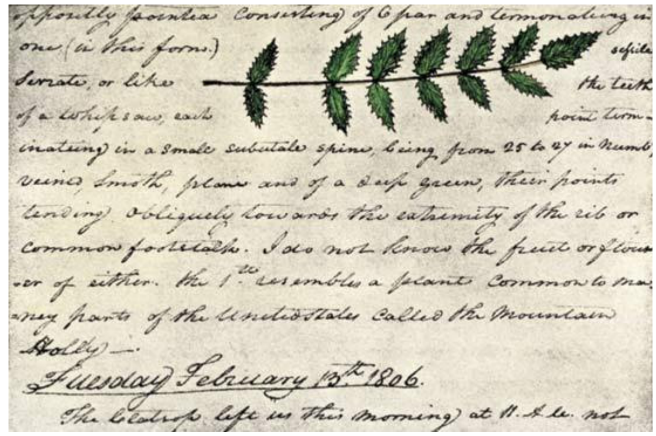
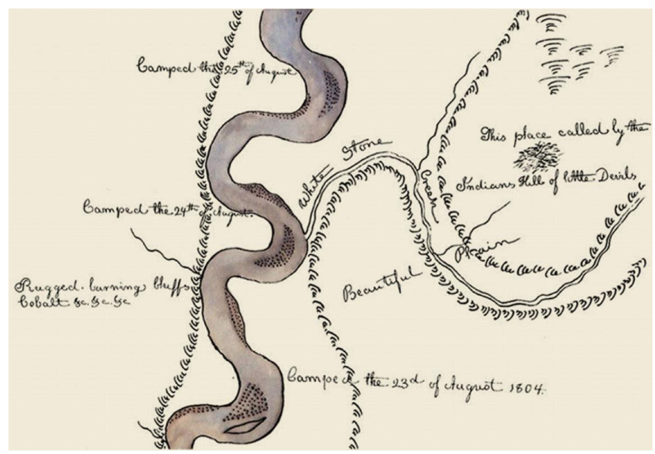
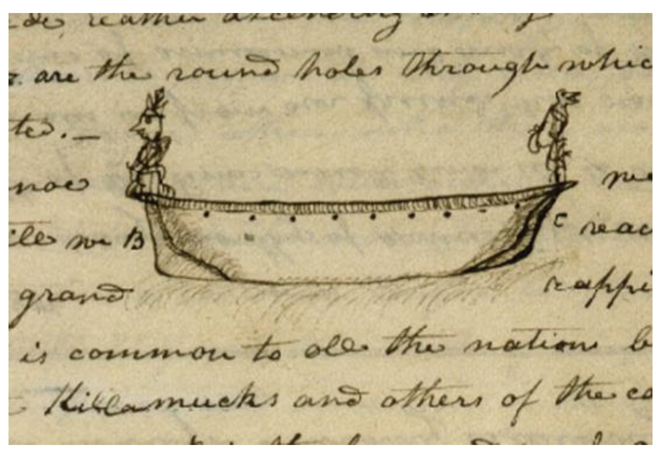

Fort Clatsop.
Tuesday January 1st 1806.
Clatsop Paddle 5 feet long
4 In. greatest width of blade


Tuesday February 18th 1806.


Camped the 25th of August
Camped the 24th of August
This place called by the
Indians Hill of little Devils
White Stone
Creek
Plain
Beautiful
Rugged burning Bluffs
Cobalt &c. &c. &c
Camped the 23d of August 1804.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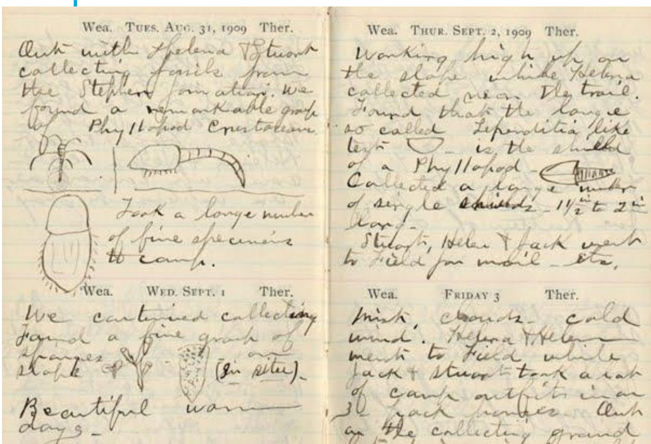
is common to all the nation
Killamucks and others of the co


Wea. TUES. AUG. 31, 1909 Ther.
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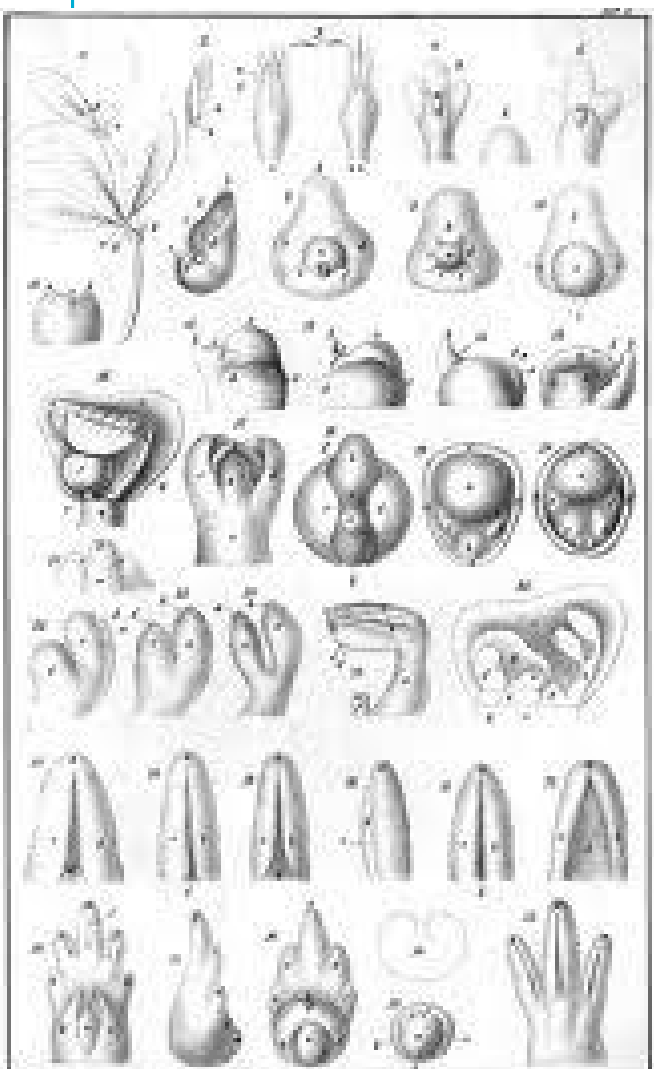
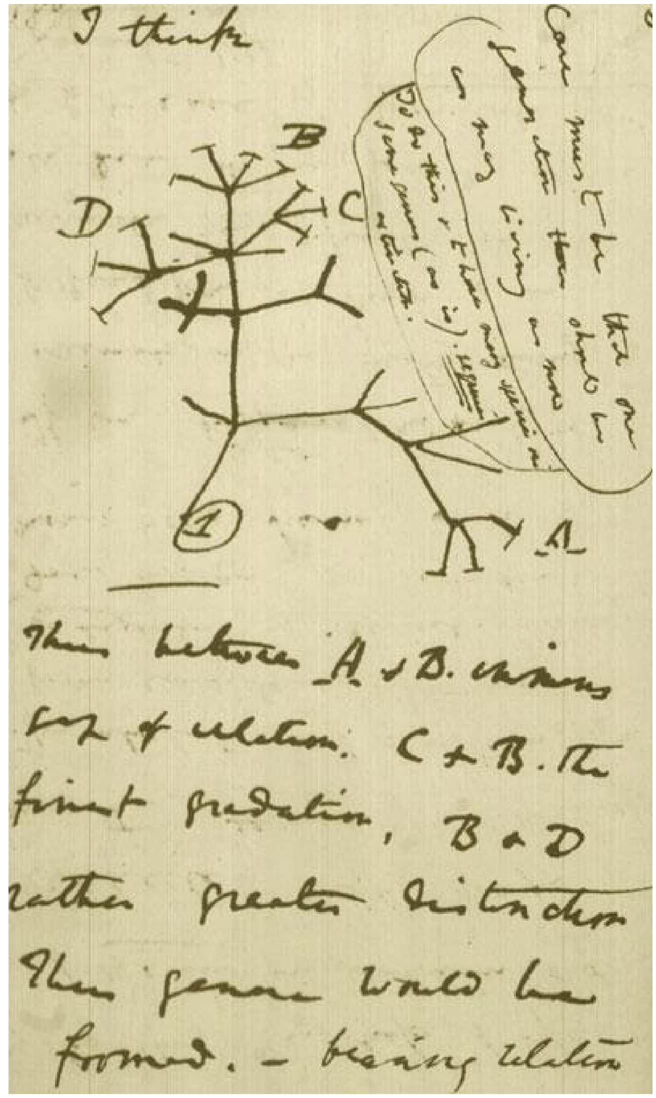
Wea. WED. SEPT. 1 Ther.
Wea. FRIDAY 3 Ther.




I think
B
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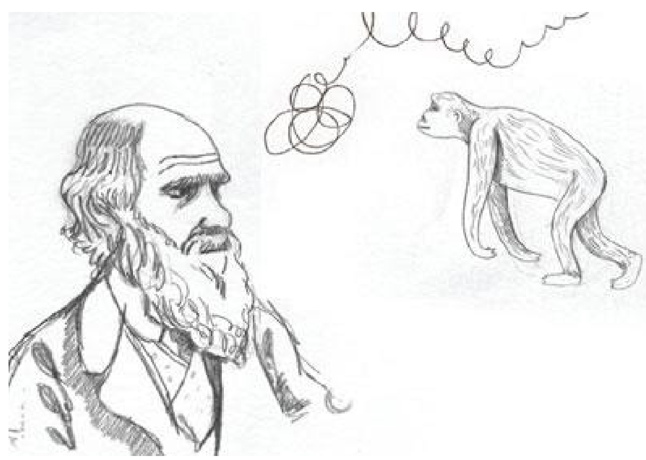
1
A



Part 2: Overview (Discuss)

- What do you see?
- How did these different naturalists record information about environments they were in?
    - They made drawings, paintings, photographs
    - They used words to note details about the place
    - They noted temperature and weather conditions
    - They made maps
    - They wrote and sang songs
- What were these different artists/naturalists interested in sharing in their artworks?
- Do you see differences and/or similarities among these artworks? What are they?
- What else do you want to know about the places or things that are in these examples? What questions would you ask the creators?
- What do you think you would need to bring with you on a journey to one of these environments so that you could observe closely? Why would you bring these items?
- Have you ever been near or seen the Hudson River? Have you ever been to a natural environment that you thought was beautiful? What do you remember? What did you see, smell, or hear? Did you see any flora or fauna? Was it warm, cold, windy, rainy, or sunny? During what time of year (season) was your visit?

Part 3: Data Detectives (Activity 1)

Duration: 20 minutes

Materials needed:

- Paper
- Pencil
- Found objects in your home

Procedure:

1. **Find a collection of objects around you.**
   A good source of data is a collection, or group of things that have something in common. Do you have a collection that you can use to represent data? Examples of common household collections: spoons, forks, things that you use for eating and drinking, books, DVDs, chairs, jackets, pens, pencils, crayons, markers, socks, hats. You may have your own collections already of rocks, shells, toys, baseball cards, stamps, Pokemon cards, action figures, dolls, or games.
2. **Gather data, or information, about one collection of objects.**
   - How many total objects are in the collection?
   - How many different sizes are represented?
   - How many shapes are represented?
   - Are the objects made of different materials or are they all the same material?
   - Do you use these objects for different purposes?
   - How can you categorize, or group, your collection in different ways?
   - What other data can you gather about your collection to share?

Share your work:

Take a photo of your collection and post it to Instagram using the hashtags #MuseumFromHome and #NaturalistsJourney, and tag the Hudson River Museum.

Part 4: Guess My Object! (Activity 2)

Duration: 20 minutes

Materials needed:

- Paper
- Pencil
- Found objects in your home
- Your five senses: sight, smell, touch, hearing, and taste

Procedure:

A naturalist collects information about what they observe in different environments, bringing back knowledge to people who may be unfamiliar with the place they have explored. The naturalist is tasked with finding a way to capture, describe, and depict the plants, animals, landscape, sounds, smells, and **sensory** feelings that they experience in these environments, to share with people who do not have the ability to see their discoveries in-person. In this activity, you will be a naturalist in your own home.

1. **Find an object in your home that you find particularly interesting.** This can be something big or small, natural or man-made.
2. **Once you choose an object, become a naturalist and use your five senses to describe in detail the subject.** Use the worksheet below labeled "Guess My Object!" to accomplish this task. Write what it looks like, smells like, feels like, sounds like, and—only if it is safe—what it tastes like! Draw a sketch of your object. Use labels to add descriptions in words as well as through the drawing.
3. **Challenge someone!** Ask someone to try to guess your object without telling them what it is. They can only ask you YES or NO questions, and they can ask a maximum of 20 questions. Keep all your observations in mind and in front of you on this sheet without showing them.

Share your work:

Take a picture of the worksheet and post it to Instagram using the hashtags #MuseumFromHome and #NaturalistsJourney, and tag the Hudson River Museum.

Worksheet for *Guess My Object*

Choose an object to observe: _____

List at least five observations. Use as many of your senses as you can to describe your object. What is the object? Where is it usually found? How is it used? Who uses it? What is its purpose?

Look

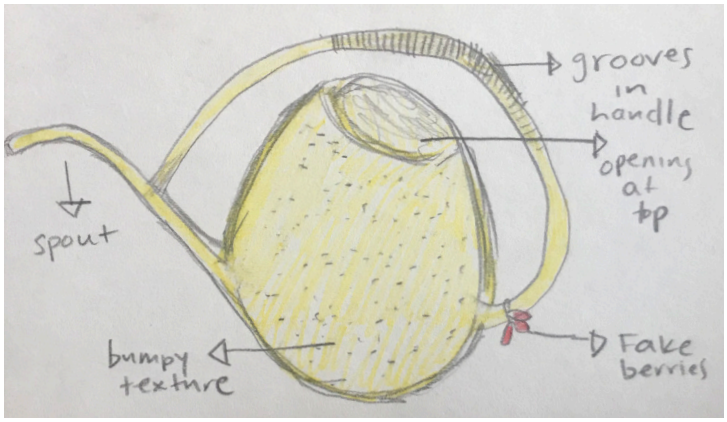
Feel

Smell

Listen/hear

Taste (only if it is safe!)

Draw a picture of the object here. Use labels to add details in writing.



My object: Watering Can

LOOK: Yellow color, slightly bumpy surface texture, handle that curves all the way from the back and connects with long curved spout in front. Fake berries wrapped around handle. The berries are red and smooth. The can has a large opening at the top - I can fit my hand inside.

FEEL: A slightly bumpy feel. Feels like plastic material. The handle has grooves instead of bumps. When I hold the handle I feel the grooves. It is dry inside. It is light, not heavy.

SMELL: No smell!

LISTEN: No sound unless I tap it.

TASTE: Not tasting - it is not edible food!

Part 5: Create a Naturalist's Journal (Activity 3)

Duration: 20 minutes

Materials needed:

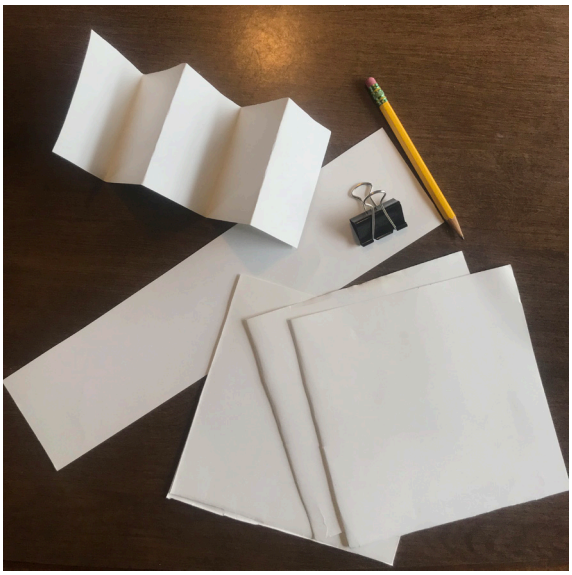
- Paper
- Pencil
- Markers, crayons, and/or colored pencils
- Your five senses: sight, smell, touch, hearing, and taste
- If available, a ruler, thermometer, magnifying glass, or other tools for measuring data
- If outdoors, use natural specimens found in a park or in your backyard
- If indoors, use natural specimens like houseplants, fruits, vegetables, or pets as subjects

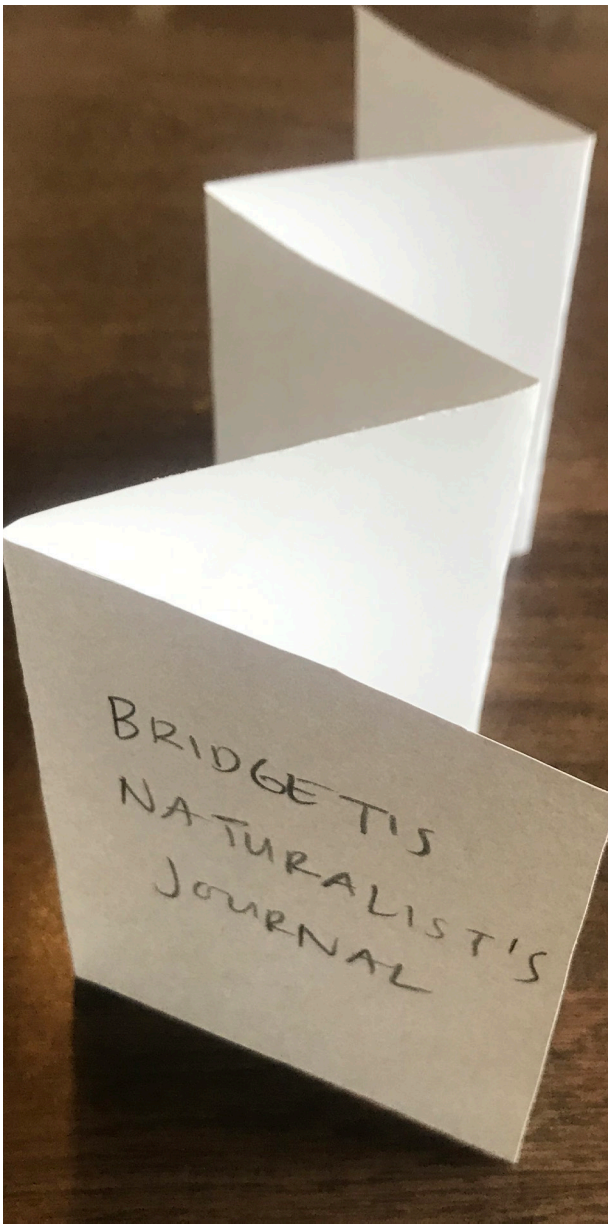
Procedure:

Naturalists record their work using journals. These are often small notebooks that they carry around with them as they explore different habitats. The journals of famous naturalists, such as Charles Darwin or Lewis, Clark, and Sacagawea have been studied for years to learn about the different places they explored and the flora and fauna they observed. Naturalist journals are important in documenting what living things existed in a certain place and at a certain time. The American West that Lewis, Clark, and Sacagawea documented in their naturalist journals in the early 1800s looks very different from the American West of today.

In this activity, you will be making your own naturalist journal. Use this journal to document the habitat around you.

1. **Gather pieces of paper.** This can be whatever paper you have around your home—printer paper, notebook paper, or even just scraps.
2. **Arrange the paper into a booklet.** Take as much creative liberty as you like when making these journals. You can staple all the pieces together as they are, fold the papers in half and staple the edges, make an accordion book by folding the paper, or find your own original method. Label the front page of your journal "[insert your name]'s Naturalist's Journal."
3. **Explore your environment and document what you find in your journal.** You can explore the flora and fauna in your home (house

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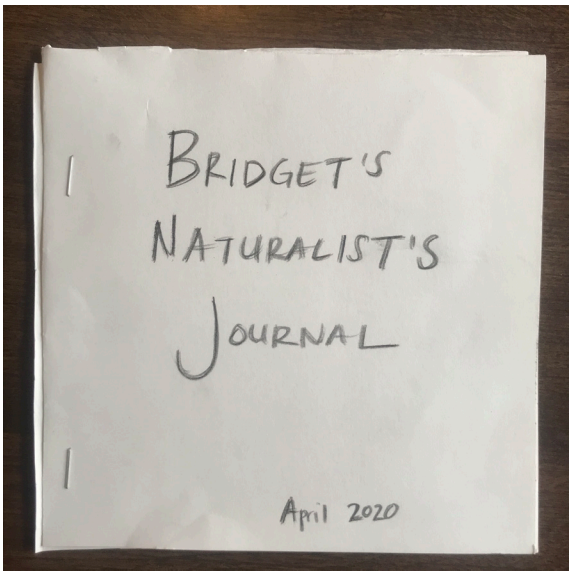
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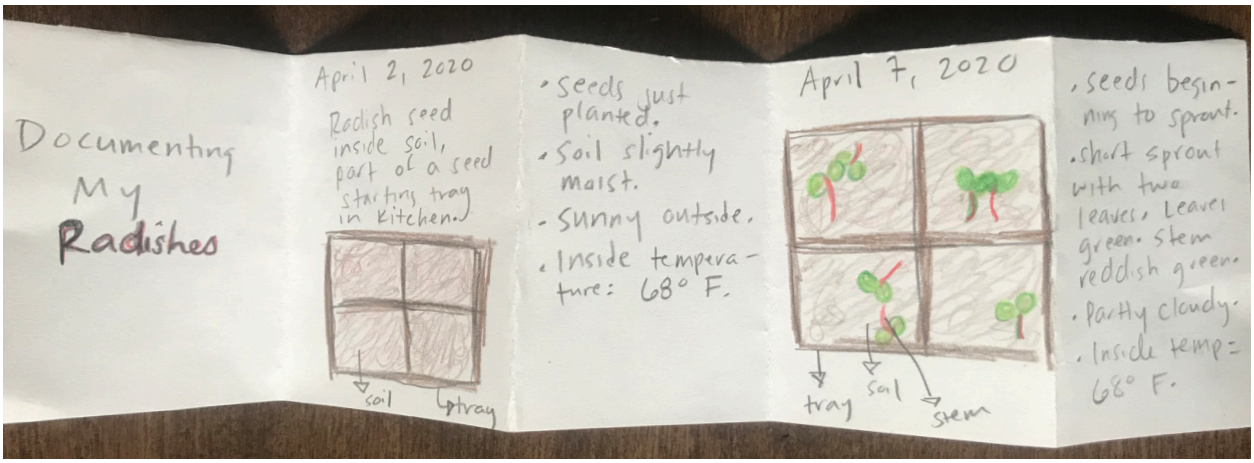
JOURNAL
April 2020


Documenting
My
Radishes
April 2, 2020
Radish seed inside soil, part of a seed starting tray in kitchen.
soil
tray
• Seeds just planted.
• Soil slightly moist.
• Sunny outside.
• Inside temperature: 68° F.
April 7, 2020
tray
soil
stem
• Seeds beginning to sprout.
• Short sprout with two leaves. Leaves green. Stem reddish green.
• Partly cloudy.
• Inside temp = 68° F.

plants, pets, other people) or, if you are able to, document what you see outside during this time.

4. **Use your five senses to experience what you are documenting, or recording, in your journal.** Write what each subject looks like, smells like, sounds like, feels like, and—if it is safe—what it tastes like. Then draw or color a picture of the subject. Add any other details that are important. Maybe you describe how the subject is behaving differently now than it usually would. Maybe the subject is living in a different space, or in a different way, than usual. Add anything that you think is interesting or notable! Use labels and words as well as your drawings to record your observations.
5. **Include details about the environment.** Is it warm or cold? Is it light or dark? Is the weather outside of interest? What time of year is it? What is the date? What time of day is it? Include this data with your record.
6. **Keep this journal as a document of your experience.** Add more pages, or make a new journal, if you want to continue to add to it. You or someone else may use your journal(s) one day to learn about a certain place and time, just like we do now with the naturalist journals of the past!

Share your work:

Take a picture of your journal (or specific entries) and post it to Instagram using the hashtags #MuseumFromHome and #NaturalistsJourney, and tag the Hudson River Museum.

Part 6: Glossary & Further Reading

Advocate: Someone who publicly supports something. Advocating is the act of public support of a cause.

Data: Information. Data can take many different forms.

Ecosystem: A biological community of interacting organisms and their physical environment.

Environment: The surroundings or conditions in which a person, animal, or plant lives or operates.

Environmentalist: A person who is concerned with or advocates for the protection of the environment.

Fauna: All of the animal life present in a particular region or time.

Flora: All the plant life present in a particular region or time, generally the naturally occurring (indigenous) native plants.

Geography: A science that deals with the Earth's surface and the ways that people affect and are affected by the natural world.

Habitat: The physical and biological environment on which a given species depends for its survival.

Hudson River School: The collective name given to a number of nineteenth-century North American landscape painters who depicted scenes of natural beauty in areas that included the Hudson River Valley and the Catskill Mountains.

Industrialization: When industry, manufacturing, and other mechanical processes are introduced on a large scale to a region or country.

Landscape: All the visible features of an area of countryside or land, often considered in terms of their aesthetic appeal or beauty. Landscape art is a major genre of art and takes many different forms.

Man-made: Something made by humans rather than occurring in nature; artificial or synthetic.

Naturalist: Someone who observes nature and records what they see and experience.

Observation: The power of seeing or taking notice of something; can involve measurement with instruments.

Pollution: Something introduced into the environment that is dirty, unclean, or has a harmful effect, often the result of industry and human activity.

Scientist: A person who studies, specializes in, or investigates a field of science and does scientific work.

Sensory: Relating to sensation or the physical senses; transmitted or perceived by the senses.

Part 7: Further Reading for Educators and Parents

The Hudson Riverama at the HRM is an interactive teaching gallery that focuses on the natural and environmental history, habitats, flora, and fauna, as well as geography and landscape of the Hudson River. We know many details about the different habitats that are found within the 315-mile long ecosystem of the Hudson River estuary due to the work of naturalists past and present, including the work of Hudson River School artists who were documenting the landscape's changes in light of increased human population and industrialization during the nineteenth century.

Although often thought of as polluted, the River is home to a wide variety of living things, and in past decades has shown improvement in its overall health because of efforts of environmental organizations like Riverkeeper. Due to the diverse features of the landscape and the mixture of salt and freshwater caused by the tides, the Hudson changes dramatically along its course, providing homes for a variety of different animals and plants.

Related HRM Exhibitions:

Frances Hynes: Constellations

Thomas Cole's Refrain: The Paintings of Catskill Creek

Janelle Lynch: Another Way of Looking at Love

James McElhinney: Discover the Hudson Anew

Hudson River Environmental History and Advocacy:

Riverkeeper

Sarah Lawrence College Center for the Urban River at Beczak (CURB)

New York State Department of Environmental Conservation

Part 7: Standards

Common Core Learning Standards

English Language Arts

Reading Informational Text:

Key Ideas and Details: CCSS.ELA-LITERACY.RI.K-5.1
Range of Reading & Level of Text Complexity: CCSS.ELA-LITERACY.RI.K-5.10

Foundational Reading Skills:

Print Concepts: CCSS.ELA-LITERACY.RF.K-1.1
Phonological Awareness: CCSS.ELA-LITERACY.RF.K-1.2
Phonics and Word Recognition: CCSS.ELA-LITERACY.RF.K-5.3
Fluency: CCSS.ELA-LITERACY.RF.K-5.4

Writing:

Texts Types and Purposes: CCSS.ELA-LITERACY.W.K-5.1-2
Research to Build and Present Knowledge: CCSS.ELA-LITERACY.W.K-5.7-9

Speaking and Listening:

Comprehension and Collaboration: CCSS.ELA-LITERACY.SL.K-5.1-3
Presentation of Knowledge and Ideas: CCSS.ELA-LITERACY.SL.K-5.4-6

Language:

Conventions of Standard English: CCSS.ELA-LITERACY.L.K-5.1-2
Knowledge of Language: CCSS.ELA-LITERACY.L.K-5.3
Vocabulary Acquisition and Use: CCSS.ELA-LITERACY.L.K-5.4-6

New York State Learning Standards

Mathematics, Science, and Technology

Standard 4: Science

English Language Arts

Standard 1: Language for Information and Understanding

The Arts

Standard 1: Creating, Performing and Participating in the Arts
Standard 2: Knowing and Using Arts Materials and Resources

Social Studies

Standard 1: History of the United States and New York
Standard 3: Geography