



Noticing Species

Noticing and observing the natural world contributes to deeper connections with the amazing diversity of life around us. In this activity, youth focus their attention on making observations and noticing details of plants, animals, and other living things. They then use their creativity to show what they observed.

This activity can be part of in-person or virtual out-of-school time learning. Although this activity does not require technology use by youth, educators are encouraged to use the Seek app, a free download for Android or iOS. The Seek app is a rich tool for finding out more about the living things we observe. Seek can also strengthen the student experience as they explore the outdoors, if the technology is available.

This activity guide is made possible with the generous support of the Charles Stewart Mott Foundation. Tag your photos with **#NatGeoBioblitz** and inspire others to explore outdoors.

Activity: Living Data

45-60 minutes or more

Can be adapted for all ages

Objective: Youth practice noticing the living organisms around them outdoors. They ask a question and make notes of what they observe. They then create a unique visual about living things observed and share it with the group.

Where: A park, a backyard, on a neighborhood walk, or through a window. Virtual or in-person.

Students will need: Two sheets of drawing paper, pencil (colored pencils or markers optional), and a clipboard, book, or other hard surface.

Technology: Optionally, the instructor and/or students can use the Seek app to help identify plants, animals, and other organisms.

Directions:

Step 1: I notice...

Ask students to be still in a place where they can see, hear, or smell nature. They can look out a window at living things, or help them find a socially distanced spot outdoors. Have them take one minute to look, listen, and smell. You can set a timer to let them know when time is up. Then ask them to jot down on paper three things they notice about the living things in this place. Ideas might include the following: many shades of green, different shapes of leaves, squirrels moving from tree to tree, bees on flowers, ants on the ground, and more. Talk together about what everyone noticed.

Step 2: I wonder...

Ask: *What do you wonder about what you noticed?* Prompt students to pick one of the three things they noticed and ask a question about it. Here are some examples:

- *How many of these leaves on the ground are green? (or red? or yellow?)*
- *How many different shapes of leaves can I see?*
- *What colors are the birds that I see?*
- *Where does the squirrel spend its time? (On what part of a tree? On a fence? On the ground? How long in each place?)*
- *How many bees do I see on the flowers?*

Questions can be about variety, frequency, behavior, interrelationships, change over time, size, volume, amount, and more. Have them add their question to the paper.

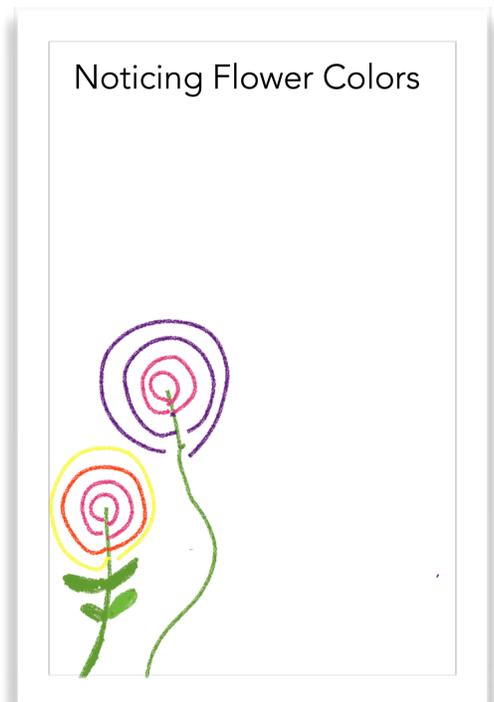
Step 3: Collect data

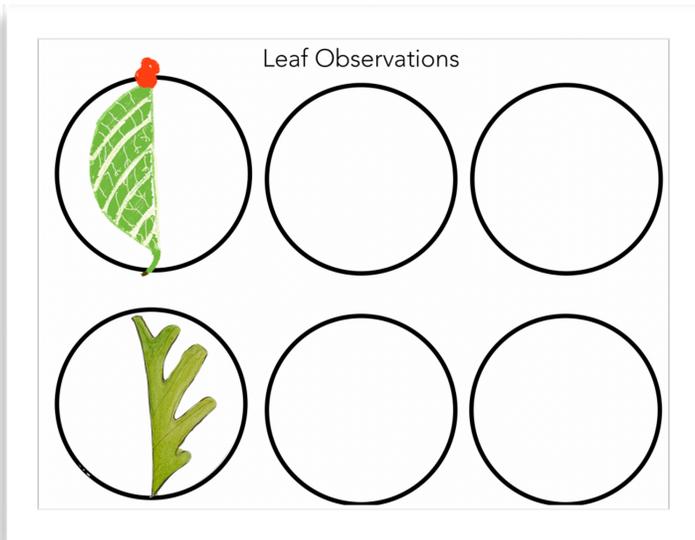
Give time for more observing of the area outdoors, approximately two to five minutes, depending on the attention span of the group. This time, ask students to use their senses to try to find answers to their question from step 2. Tell them to make notes or draw pictures about what they observe. These notes and pictures are their *data*, or information about what they observe.

Step 4: Tell a story

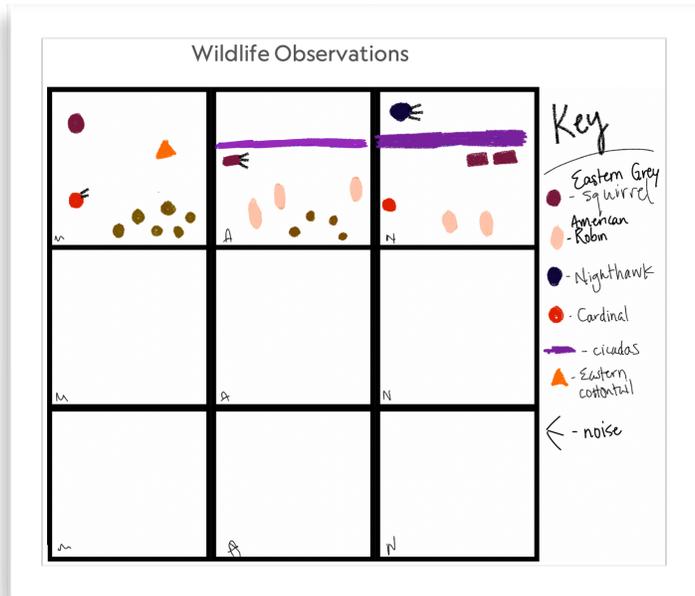
Next ask students to think of an artistic, creative way to tell the story of their data. They could make a bar or pie graph. Or they can use shapes, colors, sizes, numbers, objects or icons. Have them use a new sheet of paper. See three examples of creative data visualizations:

Flower walk: Each stem represents a garden patch. Each ring represents the colors of flowers in that patch. In this example you can see the colors found were yellow and pink in one patch and pink and purple in another.





Leaf Observations: In the circles are shapes and patterns of the leaves found in an area.



Wildlife Observations

Each row represents a day, and each box is ten minutes spent observing in the morning (M), afternoon (A), and night (N). Each shape is a bird observed, with the lines extending from each representing animal sounds.

If helpful, you could approach this as a group project. Everyone can agree on a question, observe and collect data, and then decide how to tell the story of the data together.

You can explore more creative data visualization examples on the [Dear Data](https://deardata.com/) website.

Step 5: Share

Have everyone show what they created. Display the drawings on walls to allow for social distancing while seeing what was observed and created. If virtual, have everyone post a photo to a shared board, such as [Google Jamboard](https://jamboard.google.com/) or [Padlet](https://padlet.com/).

Optional: Use Seek to identify species or learn more about an organism's range, behaviors, life stages, and more. Seek can also be used to identify pictures of an organism.

More ideas:

- **Dear Data:** For more examples of creative data display, explore [Dear Data](#).
- **Naming and Indigenous Ethnobotany:** The Seek app will show the common name and scientific name for each observation. Type the scientific name of a plant into this [database](#) to learn how it was used by Indigenous peoples.
- **Mapping with Seek:** Open on one of your favorite species inside the Seek app, and scroll down until you find the map. The green boxes display places where this species was found using iNaturalist. *What do you notice? What do you wonder?* Zoom in with your fingers to see if the species is located near any bodies of water. *Do you notice any patterns about where this species is found?* Zoom all the way out. Look to see where this species is located around the globe. *What do you notice? What do you wonder?*
- **Take a Challenge:** Examine the Challenges inside the Seek app and select one to work on. Look at the list of species it wants you to notice. Pick one of the species to focus on while you explore the outdoors.
- **Parts, Purposes, and Complexities:** Show a picture of an insect. Ask: *What are the parts, purpose, and complexities of the parts of the insect's body? What do you notice about the color, shape, and line of the insect? What does the texture look like?* After discussing as a group, have everyone draw the insect and try to include the details discussed.
- **Literacy Connection/ Observing in new places:** The environment you observe has different uses for the creatures that inhabit that space. Read or watch the story [A Stone Sat Still](#). Ask:
 - *What did you notice about the stone in the story?*
 - *Reflect on where you found your observations. Look around the space. What animals do you think use this shared space?*
 - *How might visiting or exploring a space at a different time of day change what you see? (For example, in what ways might your space be different at night?)*
 - *Is there a stone near your exploration space? Try turning it over and see what creatures use the stone for shelter.*

More resources:

- National Geographic's BioBlitz afterschool guide, videos, data sheets, and more: natgeoed.org/bioblitz
- *National Geographic Explorer* magazine, with free digital issues for grades K-5/6: nationalgeographic.org/education/classroom-resources/explorer-magazine-home/