

Educator Activity Guide



How many different species of plants and animals live in Ohio?

It's a question you can help answer! As part of the COSI Science Festival, the new COSI BioBlitz initiative gives classrooms, after school centers, libraries, families, and future scientists the chance to become citizen scientists – to contribute real data to actual, ongoing research in Ohio! Between **April 29 and May 7, 2022**, your students' observations will help us better understand our own ecological communities!

Citizen science is for adults and children alike. iNaturalist and Seek can easily be used for life sciences education in the elementary, middle school, and high school classroom. See below for an introduction on how to use these free apps in the classroom setting.

In the Classroom: Our Biodiverse Ohio

What does it mean to be living? What makes something “alive”?

- There are many shared characteristics of living things, but put simply, a living thing will grow and reproduce (or make more things like itself).
- If something is not living, then it is either dead (it used to be living but can no longer grow or reproduce) or non-living (it was never alive to begin with).

Introduce various specimens to your students and ask, **is it living, non-living, or dead?**

Ohio is home to many living things – not just people! **What kinds of living things are native, or grow naturally, in our area?** Encourage students to consider not just animals, but plants (including mosses!), fungi, insects, and more. Consider different habitats – what might you find in Ohio near a pond? A river? A wetland? A forest? A prairie? What might you find in the city, even on a sidewalk?

Biodiversity is the variety of living things in a particular habitat or ecosystem. Every species of plant, animal, and fungus in an ecosystem has a role in the stability and survival of that ecosystem. The biodiversity of ecosystems should matter to us all. After all, they provide uses for humans including food, medicine, clothing, homes, and recreation.

Observing and tracking the biodiversity of Ohio isn't a job reserved for people in laboratories; all of us can contribute to our collective knowledge of biodiversity through citizen science initiatives – opportunities for people like you and I to add to the ongoing process of understanding our world through science. During COSI's BioBlitz, Ohioans have the opportunity to become citizen scientists and make meaningful observations to contribute to real, ongoing scientific research in Ohio.

Set Up iNaturalist

Download and set-up the iNaturalist app by iNaturalist, LLC.



1 **DOWNLOAD the iNATURALIST APP**
from Google Play or the Apple App Store



ANDROID



APPLE IOS



2 **CREATE an ACCOUNT**
Create a user name and password



Allow iNaturalist to access device's location

This is required for the observation to count for the BioBlitz, and required for the data to be valuable to scientists, who need to know where the species was found.



Allow iNaturalist to take pictures and video

This is required to make an observation.



Allow iNaturalist to access your photos

This is required to be able to use photos taken on your phone to upload as observations.



OR



3 **UPLOAD 20 to 30 OBSERVATIONS**

If you are an educator, experiment with iNaturalist yourself before sharing with your students! *Note that you must be 14 or older to create an account, so you may wish to create a classroom account that you can manage, allowing students to log in on their own devices.*

APPLE IOS:

Click on the “**Observe**” icon located in the toolbar at the bottom of the screen and take a photo of your plant, animal, fungus, etc.

ANDROID:

Click on the **plus sign (+)** icon in the lower right of screen and then click the “**Take Photo**” icon to take a photo of your plant, animal, fungus, etc.

Using iNaturalist

There are many ways to use iNaturalist as a classroom.
Below are a few.



Use the “Explore” button to see what has been observed already in your area.

- **Predict:** What sorts of plants and animals do your students expect to see in the area?
- **Find out:** What has already been recorded?
- **Learn:** How do other naturalists document their observations?
- **Discuss:** Did anything in our local area surprise you? What didn't surprise you?



Use the “Observe” button to take photographs of living things.

OR



Take great photos! Fill the frame with a single subject, shoot in-focus, and if it is not dangerous, hold it still to capture details. It is okay to have your hand in a picture.



Take multiple photos! The “+” button will allow you to take photos from different angles (top, bottom, sides, front, back; flowers, fruit, leaves).



Remember – stay wild! Avoid “cultivated” plants and animals (like gardens or class pets); citizen scientists should instead capture plants, weeds, fungi, trees, bugs, and animals that naturally occur in our biodiverse state. In other words, no pets, zoo animals, garden-grown plants, or selfies! If you or your students do observe non-wild organisms, remember to mark “Captive / Cultivated” on the Details screen for the observation.



Educators: Be the steward of your learners’ expectations and data! Manage data quality by watching for copyright violations pulled from the Internet and monitoring for inappropriate content. Don't ask students to confirm or agree with one another's IDs – this can incorrectly elevate an Observation to “Research Grade.” Instead, focus on exploration and discussion.



Talk about Citizen Science.

All observations made on iNaturalist go public immediately. Scientists use this data to track changes to various species and biodiversity in Ohio. All observations made in our geographic region during April 29 -May 7, 2022, will automatically be added to the BioBlitz as we work as a community to see how many different species we can identify.

For Younger Learners: Seek

For students under age 14, you may consider downloading **Seek by iNaturalist**. No account set-up is necessary for Seek, which uses image recognition technology to identify plants and animals in real time.

How to use Seek:

- Download the free Seek app from Google Play or the Apple App Store.
- Go outside! Using the Seek app, point the Camera at a living thing
- Capture the image to identify wildlife and plants you see
- Learn about the mushrooms, flowers, berries, bugs, and plants in your area!
- Earn badges for observing different types of species and participating in challenges!

Images taken through Seek by iNaturalist will not be added to the BioBlitz or uploaded for research purposes.

For Advanced Learners: Student-Run Research Projects

For older or more advanced students who enjoy using iNaturalist during the BioBlitz, you might consider having the students design and conduct their own research projects using iNaturalist. For example, they could survey an area throughout the year to document seasonal changes or the effects of nearby construction. Or, using the data supplied by iNaturalist, they could filter observations under the “Explore” page to focus their studies on specific species and their locations.

Remember, any iNaturalist observations in Ohio uploaded April 29 - May 7, 2022 will automatically become a part of the BioBlitz project, serving as real research data for scientists! Thank you for your part in contributing to our understanding of biodiversity in Ohio!

Questions? Send an email to sciencequestions@cosi.org.

