



GUIDE TO GETTING STARTED

WELCOME TO ISCIENCE!

Thanks for participating in the iScience program! We look forward to helping you and your students explore your local biodiversity! This document will get you started.

SUMMARY OF YOUR RESPONSIBILITIES

Each class participating in the iScience program should please take the following actions. Read on for more details.

1. Register for iNaturalist and send us your username so we can connect you to your iNaturalist Project
2. Check out your iNaturalist Project, which we'll create, and tweak as needed
3. Verify your mailing address so we can send your classroom kit
4. Hold at least 2 bioblitz events annually, encouraging your students to explore their local biodiversity
5. Help your students to make an average of 3 iNaturalist observations on your school grounds, annually
6. Invite a local person to give a biodiversity-themed presentation to your class
7. Annually, submit a short report, as a post to your iNaturalist Project, summarizing your class' experience

SUPPORT FROM DLIA/TVA

Discover Life in America (DLiA) and the Tennessee Valley Authority (TVA) will provide you with a classroom kit (limited one per school), which will include an iPad for posting to iNaturalist and a backpack containing a net, collecting vials, field guides, and other useful materials for collecting and observing flora and fauna. DLiA will also provide technical support, training and guidance during your participation in the iScience project.

We're continuing to develop the iScience program. Please stay tuned for updates and new materials (handouts, training and instructional videos, and other useful information), which will be available from:

- iScience webpage: <https://dlia.org/iscience>
- Main iScience Project on iNaturalist: <https://www.inaturalist.org/projects/iscience-program-participants-tva-dlia>

ABOUT INATURALIST

The iScience program is centered around iNaturalist, a citizen science platform that's accessible through the web ([iNaturalist.org](https://www.inaturalist.org)) and as an app for mobile devices ([App Store](#) or [Google Play](#)). It's a combination scientific tool and social network for nature nuts (like us 😊), and it lets you:

- Photograph and identify species (insects, bird, plants, fungi, and most other sizeable organisms) with help from built-in artificial intelligence and a large, knowledgeable community,
- Report observations of species that you encounter, and
- See what species have been reported at a place
- Create a Project focusing on a certain place or group of organisms, and post short textual updates about it

Ideally, we could identify every organism that we encounter down to the species level with 100% accuracy and create a detailed catalog of the biodiversity of a place. iNaturalist has made incredible strides to reach this vision. The app and iNaturalist community do a surprisingly good job identifying many organisms, especially larger and more popular groups like amphibians, birds, butterflies and wildflowers. It should be noted that it doesn't work as well for every group of organisms, and that's okay. Many insects, for instance, are too small or fast-moving to get clear and detailed photos using a mobile device's digital camera. Some invertebrates require dissection or microscopic inspection to identify individuals to species. Other groups, like snails, need to be photographed from specific angles for proper identification. However, most organisms can be identified down to at least the family level (and often to genus and species level), which is adequate for our purposes. The diversity of organisms on our planet is staggering, shaped by millions of years of evolution. This makes taxonomy—the study of classifying organisms—hard, but also incredibly interesting!

REGISTER FOR INATURALIST

To get started, you'll need to set up an iNaturalist account. Do this by visiting iNaturalist.org and clicking *Sign Up*, or by downloading the iNaturalist app to your iPad or other mobile device and following the in-app prompts. If you have an existing account, you're good to go! Once you've registered on iNaturalist, please send your username to Will (will@dlia.org). He'll create a Project on iNaturalist for your school and add you as an administrator.

As part of the iScience program, students will need to use iNaturalist to make species observations. If students have their own devices or have access to other devices, they can install iNaturalist, register and make observations from their own account. Otherwise, they can all use a single account, passing around the provided iPad to make observations. While not always practical, the former method has the advantage that it encourages students to use iNaturalist outside of school to explore their local environment.

YOUR INATURALIST PROJECT

We'll set up an iNaturalist Project for you named "iScience @ [name of your school] (TVA+DLiA)" using the information you provided on the iScience application form. Your Project displays all the species observations that have been reported to iNaturalist near your school. You can see how many observations have been made, who is making them, and what species have been reported. We'll send you a link to your

The screenshot shows the iNaturalist project page for "iScience South Doyle Middle School". At the top, there are navigation links for Explore, Your Observations, Community, Identify, and More. The project name is prominently displayed with a red lizard logo. Below the header, there are statistics: 8 Observations, 7 Species, 10 Identifiers, and 1 Observer. A "Recent Observations" section shows three photos with their respective species names: "Unknown", "Family Juglandaceae Walnut Family", and "Ataxus ocellatus Eastern Eyed Click beetle". There are also sections for "Most Observations", "Most Species", and "Most Observed Species". A "Project Requirements" section lists criteria for observations, such as Taxa (All Taxa), Location (South Doyle Middle School, TN, US), and Quality Grade (Research Grade, Needs ID, Casual). A "Map of Observations" shows the school's location on a map. The footer includes links for About, Help, Forum, and Press, as well as social media icons and logos for the California Academy of Sciences and National Geographic.

Project and you can also find it by searching its name on [iNaturalist.org](https://www.inaturalist.org) or through the app. Above is an example of how your Project page will look.

We'll create an iNaturalist Place for your school as part of the Project setup; this is simply a designated geographic region that we want to track. We'll include your schoolyard, any obvious greenspace nearby where you and your class might like to venture, and a little extra buffer around the edges. This way, any observation reported to iNaturalist (by anyone) within this large region around your school will automatically be added to your Project. You can view the geographic bounds of this region on your Project page (orange polygon in example above); we're happy to expand or change these bounds if needed, just ask Will (will@dlia.org).

We'll also add you (via your iNaturalist username) as an administrator to the Project. If you need to change any information in the Project, such as tweaking the *About* text, you can do so directly (log into iNaturalist, go to your project and click *Edit*) or ask Will to do it for you (will@dlia.org).

Other iNaturalist users can *join* your Project in iNaturalist to get updates and see when you add posts to the project (see iNaturalist Posts below). You can also join other interesting Projects on iNaturalist. To join a Project, search for it in the iNaturalist app, tap the Project and tap *Join* near the top of the page.

OBSERVATIONS IN INATURALIST

Everything in iNaturalist is based on observations of living things. In iNaturalist, an *observation* is a digital record that a certain organism was observed at a certain place and time. You can make observations via the app or web interface; the app interface is quick and easy, while the web interface makes it possible to upload photos from a digital camera or other device. iNaturalist has detailed instructions for making an observation (see links below) and we're happy to answer questions: ask Will (will@dlia.org).

Quick how-to resources for iNaturalist:

- Tutorials: <https://www.inaturalist.org/pages/getting+started>
- Videos: <https://www.inaturalist.org/pages/video+tutorials>

Annually, each class should aim to make three iNaturalist observations per student (on average). Making observations is a quick process, with a little practice, taking less than 30 seconds. Once you get the hang of it, it's lots of fun! iNaturalist's built-in identification feature adds to the excitement. When making an observation, tap "What did you see?" to view a list of species suggestions based on your photograph. The ID system isn't perfect, but it's surprisingly accurate. After you upload an observation, members of the iNaturalist community will help you identify it or verify/correct your identification. Observations that have been verified by at least 3 people are marked as "Research Grade" and become usable for scientific research projects.

The best observations are verifiable, meaning an expert could revisit an observation later and make a species identification (or verify that the species ID associated with it is correct). Verifiable observations include one or more photos of the subject being observed and precise information about where and when the observation was made.

As you start to make observations near your school, they will appear on your iNaturalist Project. In fact, iNaturalist will automatically add any observation that is made within the geographic bounds of your Project to your Project page, where you can view them.

BIOBLITZES

Annually, each class should complete at least 2 bioblitzes of the school grounds or an alternative site (such as a local park). Generally, a bioblitz is defined as an intensive survey of the biodiversity of a place—all the animals, plants, and other organisms that live there—often spanning an entire day or more. However, for the purposes of the iScience program, class bioblitzes can range from short, class-period-length forays outside to special events lasting several hours. The goal is to get students outside, to have them explore the abundance of life in their local environment, and for them to make iNaturalist observations of the organisms that they encounter. Note that short forays can be made more

frequently than twice per year; perhaps students can make a monthly or bi-monthly excursion outside for a class period.

BIODIVERSITY PRESENTATIONS

Each participating class should host at least one presentation related to local biodiversity, annually. The presenter could be a parent, local figure, scientist, etc. and the subject matter should be related to animals, plants, or other organisms that live in your area. We are happy to help you find local presenters.

INATURALIST POSTS

You can add periodic status updates to your Project page in the form of posts on iNaturalist. Posts are helpful for letting your followers know what's happening with your Project. Add one by visiting your Project page and clicking *News* (Under the *About* section in the banner) > *New Post*. Add a title and some body text and click *Submit*.

Annually, we ask that each class submit a short annual report as a post to your iNaturalist Project, summarizing your findings for the year. (How many bioblitzes did you carry out? How many species did you find? What were the highlights?) Feel free to make additional posts throughout the year! If you'd like some posting inspiration, check out the Caterpillars of Eastern North America Project on iNaturalist (<https://www.inaturalist.org/projects/caterpillars-of-eastern-north-america>).