

# Backyard Bioblitz

**Estimated Time: 2+ hours**

## SUMMARY

In this activity, families explore the biological community around their homes, either from their yard or indoors. Every day we see a number of plants (flora) and animals (fauna) around us. Often, we don't really stop to notice or think about the plants and animals we share our ecosystems with. Noticing the first robin of the year or a surprise lily can be exciting, but many other species play important roles in our ecosystems. Using identification resources and a citizen science app, track the community of plants and animals all around you!

## WHAT YOU'LL LEARN

- Plant and animal identification skills
- How to use and modify decision trees
- Structure of plants and animals

Materials List	Resources Used
<ul style="list-style-type: none"> <li>• Notebook with writing tool (pen or pencil) for tracking plants and animals</li> <li>• Binoculars (optional)</li> <li>• Smartphone or tablet (optional)</li> <li>• Camera (optional)</li> <li>• Magnifying glass (optional)</li> </ul>	<ul style="list-style-type: none"> <li>• iNaturalist app: <a href="https://www.inaturalist.org/">https://www.inaturalist.org/</a></li> <li>• Backyard Bird Blitz: <a href="https://www.inaturalist.org/projects/backyard-birding-blitz?tab=about">https://www.inaturalist.org/projects/backyard-birding-blitz?tab=about</a></li> <li>• Illinois Plant ID starting point: <a href="https://www.gardenguides.com/131589-illinois-plant-identification.html">https://www.gardenguides.com/131589-illinois-plant-identification.html</a></li> <li>• Illinois Tree ID: <a href="https://www2.illinois.gov/dnr/publications/documents/00000696.pdf">https://www2.illinois.gov/dnr/publications/documents/00000696.pdf</a></li> <li>• Audubon Society Bird ID: <a href="https://www.audubon.org/bird-guide">https://www.audubon.org/bird-guide</a></li> <li>• Audubon Society Guides: <a href="https://www.audubon.org/national-audubon-society-field-guides">https://www.audubon.org/national-audubon-society-field-guides</a></li> </ul>

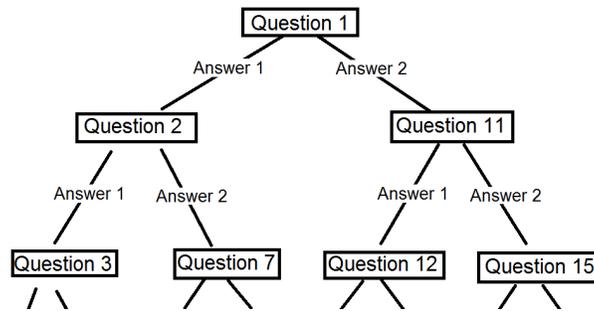
## WHAT TO DO

1. Begin by collecting and familiarizing yourself with your tools. What do you have available at home from the Materials List to help you search for organisms? What additional resources (Birding books, identification cards, national park pamphlets, etc.) do you have around your home to help?
2. Take a look at a few of the identification Resources to see what questions they ask and how you can use these tools to search for names of species.
  - a. Ask your bioblitz team: What information do we need to capture to be able to use our identification resources?
  - b. Ask your bioblitz team: How are we going to capture the information we need?
  - c. Taking photos can be especially helpful, but in the case of plants, a single picture may not be sufficient. Trees may need pictures of their leaves, fruit, and bark to make an ID. Birds may need to have their wings spread or have landed to make an ID.

3. Prepare where you will be tracking what you find.
  - a. A tracking notebook are a handy tool because notebooks provide a space for you to note what you see, while also allowing flexibility. Drawing a small picture, copying down special information or behaviors, and not having to worry about ID immediately are all benefits. You may also wish to track plants and animals separately. Below is an example of a table that would work for both plants and animals:

Date	Time	Location	Key Details	Other Notes	Species
Ex. 4/13/20	10:47am	Next to stairs	Plant About 18" tall Tendrils like a vine	Pic 5 on Mom's phone	
Ex. 4/13/20	11:03am	Bush by shed	Small bird	In a big group of them Pic 7 and 8 on Mom's phone	

- b. There is a link to the iNaturalist app in the Resources section. This app is a citizen science project that allows people to provide information on plants and animals that go into a database for scientists to use, including: date, time, GPS location, pictures, species, and more. The app helps ID species and allows other users to review your uploaded organisms to help ID them. If possible, it is highly recommended to use the app in conjunction with a notebook. It is easiest to take pictures of organisms, collect data in a notebook, and then spend time identifying organisms in groups.
4. Search your surrounding area, inside and/or outside, and find whatever plants and animals you can.
  - a. Taking pictures with a smartphone while taking down data in a notebook is best for capturing information about organisms quickly because they can be reviewed later and the smartphone will capture useful metadata that will make using iNaturalist easier. Metadata is data about data, so in this case it is information about the picture you take that includes date, time, and GPS location.
  - b. Remember to think about ALL of the living things you can find. Lift up a rock and see some bugs. Generally, the grass in your yard is not one homogenous plant (unless you are very committed to lawn care!). There's likely dandelions and clover and a variety of grass species.
  - c. Sometimes animals aren't easy to see, but evidence of an animal is. Outside of just scat (feces), animal homes can also be observed. Do you have swallows or wasps building mud nests? Has your yard been destroyed by mole hills over the fall and winter?
5. When you have observed and recorded some plants and animals to identify, return to a comfortable location to identify species. Each identification resource will have its own format, so read the instructions carefully.
  - a. Many birding books use information like where a bird prefers to stand (on the ground, perched, etc.) as well as broad categories of birds and colors to organize their IDs.
  - b. Dichotomous keys are decision trees that use questions with two possible answers to lead users to the correct species. For an additional activity, try taking a dichotomous key and visualizing it on a piece of paper by drawing out the structure of the tree. Each question will have two branches leading to other questions or a species name. They'll look something like this:



6. After attempting to identify the species of organisms you saw, open (download and install, if necessary) the iNaturalist app.
  - a. My family made a “Project” for our home that allows us to track organisms we see. Doing this makes the activity ongoing and exciting when you see something new in your yard.
  - b. Follow the directions to upload pictures of each organism. If there are multiple pictures of the same organism, include them in the same “Observation.” The app will help you identify species and allow other users to help identify species by sharing their identifications with you.
  - c. There is a project called “Backyard Bird Blitz” (see Resources section) that you can take part in and upload the birds that you observed. It is not only a fun community activity, but will provide valuable scientific data for scientists to use that would have been impossible to collect otherwise!

#### TIPS

- See “The Backyard Naturalist” activity to see how you might include drawings in your observations. This might be particularly fun for younger kids.
- Creating the data table and collecting data are important STEM skills that older kids can practice on their own. What categories of data would be better than “Other Notes”? Can a computer understand this information?
- Older kids can reorganize the dichotomous keys by switching which question comes first. Restructuring the tree practices valuable computational thinking skills.
- Continue this project throughout the year, as species you see around your house will likely change with the changing seasons. My son gets excited when we see something new to add to our collection, which extends the learning and practices the same skills constantly.