

BACKYARD BIODIVERSITY

Join the Academy of Natural Sciences for the City Nature Challenge, April 30 to May 3.

JOIN US FOR THE CITY NATURE CHALLENGE

The City Nature Challenge is a friendly competition where people from more than 300 cities compete to see who can record the most wildlife. You can join us by documenting the plants and animals you find. Ask a grown-up to help you upload your observations to iNaturalist and use this activity sheet to help you explore your waterways or your own backyard.

EXPLORE YOUR BACKYARD

Academy scientists know when they find a lot of **biodiversity**¹ in an **ecosystem**² it's a healthy environment for the plants and animals living there — including the humans! Examine the biodiversity in your backyard or a nearby outdoor area by following the steps below.

Useful tools:

- A pencil and notepad
- A small bin for collection and observation
- Magnifying glass
- Tweezers or safe scissors

Instructions:

Choose an outdoor location and determine a square spot about three feet wide.

Start by examining the plants. How many species can you collect? Use your tweezers or safety scissors to snip specimens and collect them in your bin. Observe things like the plant's color and shape to determine if it's a different species from others you collect. As you search for plants, make a note of any bugs or other animals you see in your spot.

Questions to consider:

- How many plants did you collect?
- How many animals did you see?
- What non-living things do the plants and animals rely on?
- What other animals might visit this spot today?
- What do you think lives under the soil in this spot?
- 1. Biodiversity the variety of unique species found in a specific area.
- 2. Ecosystem a community of living and nonliving things that interact with each other in an area.

EXPLORE YOUR LOCAL CREEK

"You have to look at the whole ecosystem if you really want to learn what's going on in the environment. It's by this diversity that one is able to tell the health or natural condition of a situation and how it's been altered by man."

- Dr. Ruth Patrick, Founder of the Patrick Center for Environmental Research

Dr. Patrick was a scientist at the Academy of Natural Sciences for more than 70 years. She developed what we call the Patrick Principle. She found that there are certain plants and animals that survive best in healthy conditions, and other plants and animals that survive best in polluted conditions. Dr. Patrick and her team would visit a waterway and observe the bugs, fish, algae and other living things to find out the condition of the water. A very healthy ecosystem will have a lot of biodiversity.

Instructions:

First, ask a grown-up if you can visit a local stream. Wear clothes and shoes that you don't mind getting wet or muddy. Safely explore the creek or stream by examining underwater rocks you find along the bank. Can you find any rocks with water insects clinging to them? You can use the key below to see if they are pollution tolerant³ or intolerant.⁴ Don't forget to return the rocks to the same spot where you found them when you're done.



3. **Pollution Tolerant** – organisms that can survive in poor water quality. They are common in polluted areas.



4. **Pollution Intolerant** – organisms that require good water quality. They may not be found in polluted areas.



Museum Hours (effective May 1) Thursday–Sunday: 10 a.m.–5 p.m. Members-only Hour: 9–10 a.m. 1900 Benjamin Franklin Parkway Philadelphia, PA 19103 215-299-1022

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