



Plant Biodiversity

Be an ecologist today! In this activity, you are going to try a method that scientists who study ecology use to learn what living things can be found in an ecosystem.

Why are we doing this activity?

Scientists who study the natural world, ecologists, often need to find out what plants grow in an ecosystem. Because the world is just too big to be able to study every single plant in every single ecosystem, ecologists take a random sample of the plants. They do this by creating quadrats, which are squares made of pvc pipe, and are just a little bigger than a hula hoop (usually 1m²). Then, they drop the quadrat on the ground randomly in the ecosystem, and closely study and identify all the plants within the quadrat. This is repeated many times, and this way, even though they miss a few, ecologists can learn what plants grow in an area. Learning about plants also tells us about animals, the soil, and other parts of the ecosystem.

Supplies Needed

- Hula hoop (or long piece of string, rope, or similar)
- Pencil
- Paper (2 or 3 sheets)
- Clipboard or other hard surface





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What to do

1. Find a grassy area near your home.
2. Take your hula hoop to the middle of the grassy area. Spin around 3 times and throw the hula hoop (this is how to randomly drop your quadrat).
3. If you do not have a hula hoop, you can use something long and skinny, like string, rope, even a scarf or pet leash. It should be about as long as your outstretched arms, fingertip to fingertip. Attach the ends to make a loop. Then, throw this as if it were the hula hoop. When it lands, you'll need to stretch it out into a circle shape.
4. Your hula hoop or loop of string is your quadrat, your place to look closely at what's growing here. With your pen and pencil, draw what you see in your quadrat. Without touching anything inside the quadrat, focus on finding and drawing any green plants you see, but also include bare soil, rocks, sticks, etc. It's like a treasure hunt - you might find plants with long, skinny leaves, or some with small rounded leaves. Leaves with ruffled edges or smooth edges, leaves with sharp edges. What's in YOUR quadrat?
5. Repeat your quadrat sampling a few times (throw your quadrat from wherever you ended last time) to get a good idea of what's growing throughout the ecosystem.

Want to go further?

- Plant identification - ask family members if they know the plant names. Or take photos of the plants you find, and search online or use the iNaturalist app to have your plant identified by an expert
- Do a density count - choose one type of plant, and count how many times you find it in each of your quadrats.
- Repeat this study in a different ecosystem (along a stream bank, deep in the woods) and compare your plant cover findings.
- Use your drawings of what you find in the quadrats to create unique artwork.