

Micro-Habitat Study

Estimated Time: 45-60 minutes

SUMMARY

Students will take a close look at nature by examining what they can see within a small circle of ground, both living and non-living.

WHAT YOU'LL LEARN

- The difference between “natural” and “human-created” objects.
- The definitions of “ecosystem” and “environment” as well as what organisms live nearby.

Materials Used	
<ul style="list-style-type: none"> • Coat hanger (or small length of string) • Pencil and paper for each student or a journal for each • Magnifying glass (optional) 	<ul style="list-style-type: none"> • Thermometer • Digging tools (spoons or craft sticks work great).

Getting Started

1. This activity starts outside with your family identifying an outdoor area for the activity.
2. Pull the coat hanger to form a hoop and place it on the ground of the outdoor area where you will be conducting this activity.
3. You and your student should then observe what they see within the circle, making notes on their paper or in their journal.

Plants

1. Students should observe what plants they see within the coat hanger circle. Prompt them with the following questions, if age-appropriate.
 - a. What is the dominant plant in the circle?
 - b. About how many of these plants are there? What percentage of the circle would you estimate that they cover?
 - c. What other plants do you see? How much of the circle would you estimate they cover?
 - d. Are there any plants that have flowers? Do any plants look dead?

Animals

1. Next, have students observe the animal life within the circle. Prompt them with the following questions, if age-appropriate.
 - a. What animals are present in the circle?
 - b. How many of each do you see?
 - c. What animal is the most common?

Temperature

1. Using the thermometer, have the students observe the temperature at their shoulder height. Practice measuring the temperature in degrees Celsius, if your thermometer is able.
2. Next, take the temperature at ground level by placing the thermometer flat against the earth. Is it warmer or cooler than shoulder height?
3. Finally, dig down about 6 to 12 centimeters (3 to 5 inches; make sure not to dig too deep because utility lines and cables are often buried around homes and can sometimes be very close to the surface) to measure the temperature below the surface.
4. Which of the three temperatures was the coolest? Which was the warmest? How can you explain these differences?
5. Take a look at the *sunlight* of the area. Is it very sunny, mixed shade, or very shady? How might that affect the plants and animals that live here?

Soil

1. Using the area where the student just dug up, have the students take a look at the soil in their circle.
2. Start by looking at the *moisture* of the soil. Is it dry and crumbly, a little moist to the touch, or dripping with water? Think about the recent weather and how that might affect the water content of the soil.
3. Next, look at the soil's *texture*. Is it mostly coarse sand, fine particles, or very dusty bits? Different types of soil can be better for different types of plants, so this might explain some earlier observations.
4. What is the *color* of the soil? Most soil is brownish but is yours darker, lighter, reddish... Depending on what gets mixed into the soil here you could have some strange soil indeed!
5. Finally, does the soil change at all as you get deeper? Most soil is layered and you might be seeing a few different soils stacked together.

Conclusions

1. To pull everything together, take a look at your answers to each section. Do you have clues in your observations that can explain other answers? Did you see plants that would love the warm sun you saw or the rich soil you found? Maybe you saw animals that would love to dig in this sort of sandy soil.
2. Try to look at the picture all together, then clean up anything you've left behind and say goodbye to your little micro-habitat!

TIPS

- This is a great activity to do multiple times, visiting several different sites and comparing between them. You can even visit the same site at different times of day, or you can visit during sunny weather and then again right after a heavy rain to see the difference.