

HCTF Education Habitats at Home

Learn how to create habitats that bring nature into your own backyard!

Life in the Leaf Litter

Get to know the decomposers



Leaf Litter: Rich Ecosystem, Rich Soil

With the coming of winter many trees and smaller plants lose their leaves. The fallen leaves, along with small twigs, seeds, and other woody debris that accumulate on the ground form what is known as the *leaf litter*. The leaf litter is an ecosystem full of life: it is both food and shelter for bacteria, fungi, and a variety of invertebrates. Some of these animals feed on the litter, breaking it up into smaller pieces. In turn, bacteria and fungi decompose the litter further, into chemicals and minerals. These nutrients enrich the soil as *humus* and are used again by the trees and other plants as food. Let's learn more about the leaf litter, its occupants, and what we can do to nurture them at home!

Visualize the Decomposition Cycle



A tree grows in the soil



Leaves fall to the ground



Leaves partially consumed by invertebrate decomposers begin to lose form



Further decomposition by bacteria and fungi releases chemicals and minerals

RICH SOIL

Made rich with *humus*, the dark brown or black organic material in soil that forms when plant and animal matter decays.

Meet the Decomposers

These are some of the organisms responsible for breaking down the leaf litter into humus.



Bacteria

Bacteria are the most numerous living things on the planet. They break down matter on a chemical level using enzymes to dissolve their food.



Fungi

80 to 90% of the decomposition of dead matter is accomplished by bacteria and fungi. Fungi are the only organisms able to decompose the tough lignin in wood.



Earthworms

As they eat their way through the soil, the tunnels they create make it easier for water and air to move into the soil. This is essential for plant growth.



Slugs and Snails

Common in leaf litter, where they hide by day, emerging to feed on leaves and fungi at night. The leaf litter provides the moisture they need to survive.



Sowbugs

Eating mostly dead or decaying plant material like rotting wood. A distant relative of crabs, they use gills to breathe. These need to be kept moist.

More Decomposers



Mites

Mites are abundant in the leaf litter. Oribatid mites are dark-coloured and eat bacteria and yeast, algae, fungi and rotting wood.



Millipedes

There are more than 10,000 species of millipedes known in the world. Most consume decaying plant matter and fungi, contributing significantly to the production of humus.



Springtails

Known for the forked springing organs on their abdomens that allow them to jump, springtails feed on fallen leaves, algae, and fungi.



Earwigs

Nocturnal feeders on dead plant matter, fungal spores, algae, lichen, and moss. They use the pincers on their abdomens for defense.



Click Beetles

The larvae are called wire worms and feed on rotting wood. Because wood is so nutrient-poor, click beetles take 5-7 years to mature from larvae to adult.

More trees, less lawns



Leafy trees and shrubs will create leaf litter as they drop their leaves in the fall. Trees have many other useful qualities such as providing cooling shade in summer and acting as habitat and food to animals large and small. Roots prevent erosion and leaves and branches slow rainwater, allowing it to be absorbed rather than running off. If that wasn't enough, trees produce and filter the air we breathe.

Look around your backyard, school yard, or local park: is there space for a tree? Some shrubs? Maybe even a native plant garden? Planting and caring for a tree or a garden can be a great activity for a family, a class, or a neighbourhood group. Watch it change and grow through the seasons as it enriches the area.

Give the Rake a Break



Instead of raking and removing all the leaves from your backyard, pile fallen leaves around the base of trees, and in garden beds. As the leaves decompose, they will enrich the soil, trap moisture, and host beneficial insects such as bumble bees, which overwinter in nests below the leaf litter.

Tread lightly on the litter



Life in the leaf litter is a rich and diverse community. However, it can be easily over-looked because many of its inhabitants are small and often come out at night. When walking through a woodland, it is important to stay on trails. People can destroy habitat by compacting the leaf litter and the soil below. Soil compaction can make it more difficult for plants to spread their roots and can lead to soil erosion.



Want to take a closer look at life in the leaf litter? A great tool you can make at home to extract organisms from the litter is a Berlese funnel trap. You can find instructions to make one from everday items **here**. (www.hctfeducation.ca/resource/?resourcecode=RR000043)