

Mutualism

Some plants and animals in the gardens help each other

Age: All

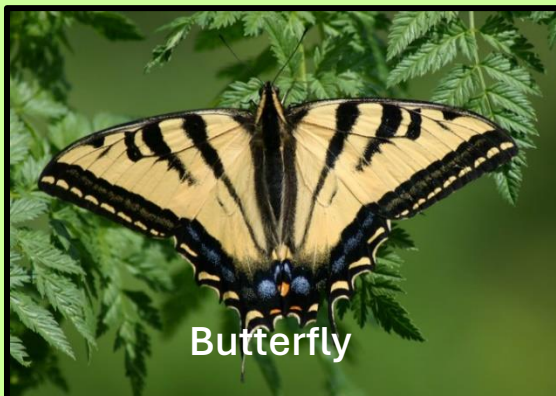
Time: 30 minutes

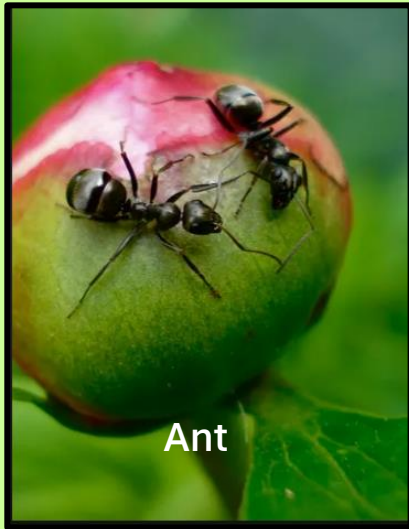
Visit the gardens at Lake Wilderness Arboretum during summer to see many examples of organisms working together. Go quietly because insects and birds are at work and do not like to be disturbed!

Here's How:

1. Visit the Perennial Garden and observe the following pairs.

Look closely to **see if you can determine how these organisms help each other:**





Ant



Peony flower



Ant



Cyclamen and seed pods



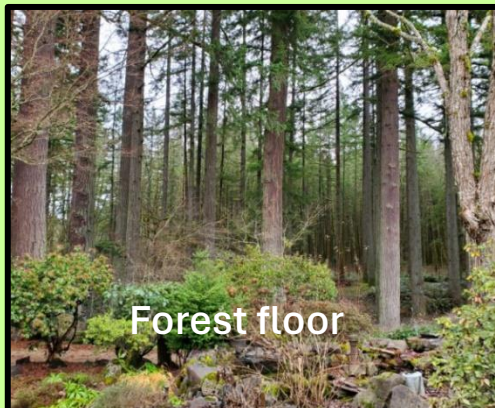
2. Visit the Woodland Garden.

Find some fungi (mushrooms) growing under trees on the forest floor.

Although you cannot see it, the fungi and trees are helping each other below the surface. How do you think the fungi and trees help each other?



Mushroom



Forest floor

Observe the blossoms on the Katsura tree at the east-central edge of Woodland Garden. **Do you hear and see bees** on the Katsura blossoms? How do the bees and blossoms help each other?



3. Visit the Rock Garden. Look for bees buzzing around the Penstemon flowers. Can you see how the bees and flowers help each other?



4. Visit the Tribal Life Trail. Look for the salal, an evergreen shrub. You may not see a **squirrel** nearby today, but can you think how the squirrel and salal help each other?



The Back Story:

Some living things that are not related interact in ways that help each other grow and be healthy. This is called mutualism. We can find several examples of mutualism in gardens at Lake Wilderness Arboretum.

For example, hummingbirds, butterflies, and bees feed on the sugary-sweet liquid (nectar) of various flowers in the gardens to give them energy, just like you need food for energy. As the birds and insects feed on the nectar, powdery substance (pollen) from the plants stick to their bodies. They fly off to other plants, carrying the pollen on them, as they look for more nectar on other plants.

When they land on another plant, some of the pollen sticks to the new plant, which helps the new plant grow and make fruit. Plants need pollen from other plants, or they will not make fruit, so it is very helpful to plants that the birds and insects deliver pollen while they are looking for their own food.

Ants and peony flowers also have a mutual relationship. Peony blossoms provide nectar that ants like to eat. While ants crawl over the blossom eating the nectar, they keep other insect pests away by stinging, biting, or spraying them with acid and tossing them off the blossom.

Seeds from plants cannot move themselves, and animals often help seeds get around. We could say that seeds hitchhike or get a free ride from animals that eat them. For example, birds, squirrels, and deer eat berries and then poop out the seeds in other places. The animals have a tasty meal and the plants' seeds are delivered to a new home where they can grow.

In the case of the seeds released from the Cyclamen pods, ants carry the seeds away from the pod and eat the sticky covering which is full of nutrients, then discard the seed in a new growing place.

Fungi and trees or other green plants help each other in very important ways that are not seen because all the action is happening underground around the tree's and plant's root systems. The tree and plant make sugary food for itself from carbon dioxide in the air when the sun shines on its leaves in a process called *photosynthesis*. The sugary food travels throughout the plant to help it grow, including to the plant's roots.

Meanwhile, fungi send out thousands of long threads through the soil, which gather in moisture and minerals, and connect with the tree's and plant's root systems. These threads take in the sugary food from the tree and plant roots, and they give the plant water and minerals that they have gathered from the soil. This relationship between fungus and plant roots is called *mycorrhiza*.