

Fun with Fungi

Overview: Often overlooked in the garden ecosystem, fungi play a critical role in the decomposition and nutrient cycles that help your plants grow. This activity offers ideas for introducing young gardeners to the "fun guys" (AKA fungi).

Materials:

- A mushroom field guide (there are many available such as the USDA's *Field Guide to Common Macrofungi in Eastern Forests*, available at: https://www.fs.fed.us/nrs/pubs/gtr/gtr_nrs79.pdf) or An identification app (like Seek by iNaturalist)
- Garden or nature journal
- Pencil or crayons
- Digital camera



Approximate Time to Complete: 30+ minutes

Location: Outdoor

Ages: K – 5th Grade

Season: Any season

Instructions

Beyond plants and animals, there are some other "fun" organisms living in your garden – fungi! There are many types and species of fungi, and they include a wide range of organisms. Some are too small to see without a microscope, such as the mycorrhizae that connect your plant roots below the ground (read more at Mycorrhizae and Plants: <https://kidsgardening.org/garden-how-to-mycorrhizae/>). Others are easier to see, like the mushrooms found in a diversity of sizes, shapes, and colors that seem to spring up overnight around your garden.

Unlike plants that make their own food through photosynthesis, fungi rely on forming *parasitic* (negatively impacting host organisms) or *symbiotic* (beneficial to other organisms) relationships with other organisms to meet their energy needs. Many fungi, including most mushrooms, are important decomposers. Not only do they gain energy from dead plant matter for their own nutrition, in the process they also release nutrients back into the soil to benefit all the plants around them. Mushrooms are one of the most widely recognized fungi in a garden setting.

Note on pronunciation: The word *fungi* can be pronounced in various ways. Some people say "FUN-guy" (hard g); some say "FUN-ji" (soft g as in giant, long i as in tie). And some say "FUN-gee" pronounced with either a soft or hard g.

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1. Introduce your young gardeners to mushrooms. Mushrooms are made up of two components. The part we are most familiar with is the *fruiting body* that we see above ground. The fruiting body makes spores which, like seeds, spread to produce more mushrooms. This above-ground mushroom sprouts from the underground portion of the organism — a network of threadlike cells called mycelium (my-SEE-lee-um) that can grow to cover great distances. This is the part of the mushroom that helps break down dead plant material and then releases nutrients back into the soil.

Mushrooms come in a wide variety of shapes and sizes. Plan a time to go on a mushroom hunt with your young gardeners in your garden or a nearby green space or natural area. If you have trouble finding mushrooms, note that they are most common in cool, moist soil and shady areas, and some types will even pop up in a lawn overnight, especially after a rainy spell.

2. Before going on your hunt, make sure to explain to kids that many mushrooms are poisonous and that they should never touch or eat any of the mushrooms that they find in the wild. Remind them to observe with their eyes only, and not just because some mushrooms are poisonous: Share with kids that mushrooms are fulfilling an important job in your garden's ecosystem and so, just like plants and animals, we do not want to interfere with their hard work. Mushrooms are only poisonous if consumed, so let them know that if they do end up touching a mushroom that they must make sure to wash their hands before eating.
3. Obtain a copy of a mushroom guide or download a nature ID app on your smart phone. The USDA has an extensive Mushroom Field Guide available at: https://www.fs.fed.us/nrs/pubs/gtr/gtr_nrs79.pdf. The Seek app by iNaturalist (more information at: https://www.inaturalist.org/pages/seek_app) offers resources for identifying fungi too.
4. Let the search begin! You are very likely to find mushrooms in areas where wood is decomposing. Check out fallen trees, older wooden raised beds, areas where trees have been removed, and paths or garden beds with recently applied mulch. Have kids draw pictures in their garden journals or snap digital photographs of the mushrooms. You can try to identify your mushroom while you are in the field, or wait until you return indoors.
5. As you collect observations, talk about differences in the size, color, and shape of the mushrooms you discover. Where did you find them? Do you notice any link with the weather (cool vs. hot, wet vs. dry) or conditions (shade vs. sun)? Turn it into a game. Who can find the biggest mushroom? Who can find the smallest mushroom?

*If your kids would like to sample some edible mushrooms, purchase them at a grocery store. You may also want to try your hand at growing mushrooms using a mushroom grow kit, such as the Back to the Roots Kits (<https://backtotheroots.com/products/mushroom-grow-kit>) featured in our 2021 Youth Garden Grant Packages.

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