

What are Fungi?



Chanterelles

The kingdom fungi is a category of eukaryotic organisms that doesn't only include mushrooms, but also molds and yeast. There are estimated to be over 1.5 million species of fungi worldwide, and almost all of them are multicellular. They cannot photosynthesize or produce their own food, so instead they use absorption to get nutrients and energy from organic matter. This means that they are heterotrophic. So, what are fungi made of? Fungi are made up of tiny individual filaments which are tightly packed together. These filaments are known as hyphae, and when grouped together, they are collectively called mycelium. Mycelium is very high in nutrients, and is very good for you.



Amanita muscaria var. *guessowii*

The most commonly known type of fungus is a mushroom. There are over a thousand species of them around the world, and they can loosely be grouped in certain categories based primarily on their appearance. Below is a list of these groups, as well as an example of a mushroom that fits into each section. These groupings are very helpful for identifying mushrooms as well as classifying them.

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| -Gilled (<i>Amanita muscaria</i> , <i>mycena</i>) | -Veins /folds (Chanterelles) |
| -Teeth (Lion's mane) | -Cups and discs (Orange peel fungus) |
| -Corals and cauliflower (Crown-tipped coral) | -Bird nests |
| -Clubs | -Boletes (Slippery jack, king bolete) |
| -Puffballs and earthstars | -Polypores (Artist's conk) |
| -Truffles and false truffles | -Crusts |
| -Jellies (Witch's butter) | -Morels and false morels (Yellow morels) |

Mushrooms can also be grouped by the way they get nutrients. They all use absorption, but by participating in different interactions. Firstly, there are saprobe mushrooms. Saprobe mushrooms get nutrients from a dead host, such as a decaying log. They are decomposers. An example of a saprobe is a turkey tail fungus, which primarily grow on old, dead wood. Then there are symbiotic mushrooms. Symbiotic mushrooms form a bond or partnership with another living organism, and together they provide for each other. Mycorrhizae mushrooms are a prime example of a symbiotic relationship between mushrooms and trees. The tree and the mushrooms exchange and share nutrients between each other. Lastly, there are parasitic mushrooms. Parasitic mushrooms feed off a live host, harming it in the process and sometimes even killing it.

PHOTOS



Above: Candlesnuff Fungus (*Xylaria hypoxylon*), Right: earthstar (*Geastrales*), Below (left): Admirable bolete (*Aureoboletus mirabilis*).



Above: Coral fungi (*Clavarioid*), Right: Elves saddle (*Helvella lacunosa*), Left: Bird's nest fungi (*Nidulariaceae*), Far left: Toothed jelly fungus (*Pseudohydnum gelatinosum*).

Photo Credit: Mohannah Singh