Mycology

Flora, fauna and *funga*!

Funga

Fungi are a kingdom including mushrooms, mold and yeast. Fungi are eukaryotic (cells have a nucleus) organisms characterized by chitin in their cell walls. Fungi are heterotrophs, consumers in the food chain. They secrete digestive enzymes into the immediate environment and absorb molecules. They are the principal decomposers in the environment.

Funga vocabulary

- Hyphae are branching threads that make up the mycelium.
- Mycelium is the growth part of fungus.
- Mycorrhizae is the relationship of joining of fungus to plant roots.
- Spores are tiny single-celled reproductive units.

Three kinds of fungus

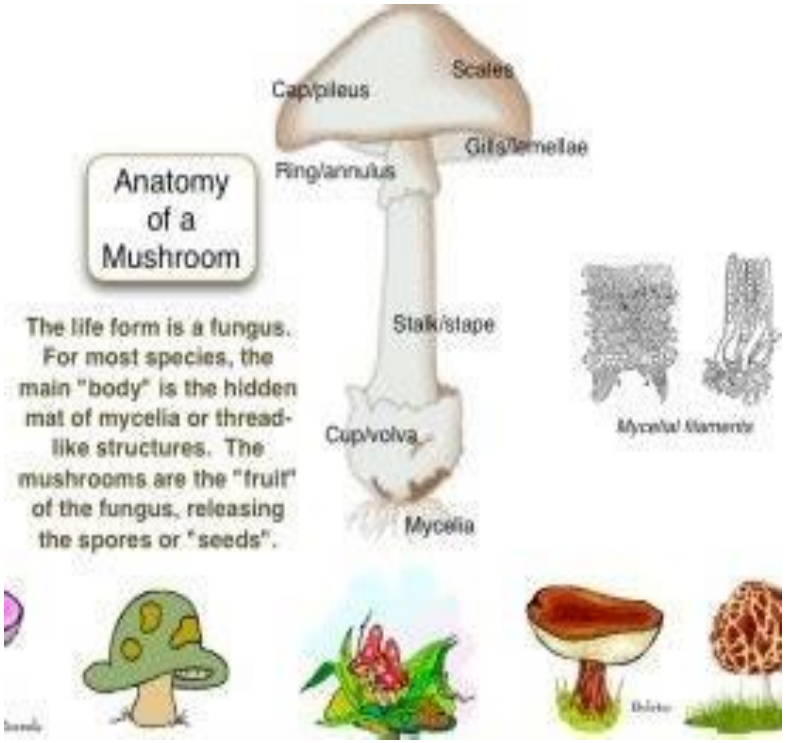
Mushrooms--A mushroom is the fleshy, spore-bearing fruiting body of a fungus, typically produced above ground, on soil, or on its food source.

Yeast--Yeast is a single celled organism, which needs food, warmth, and moisture to live.

Molds--Mold is a fungal growth that forms and spreads on damp or decaying organic matter

Mushroom structure

The parts of a mushroom are are the fruiting body (cap, gills/teeth, spores, a ring/skirt, the stem/stalk, the volva, the basal bulb), and mycelium.

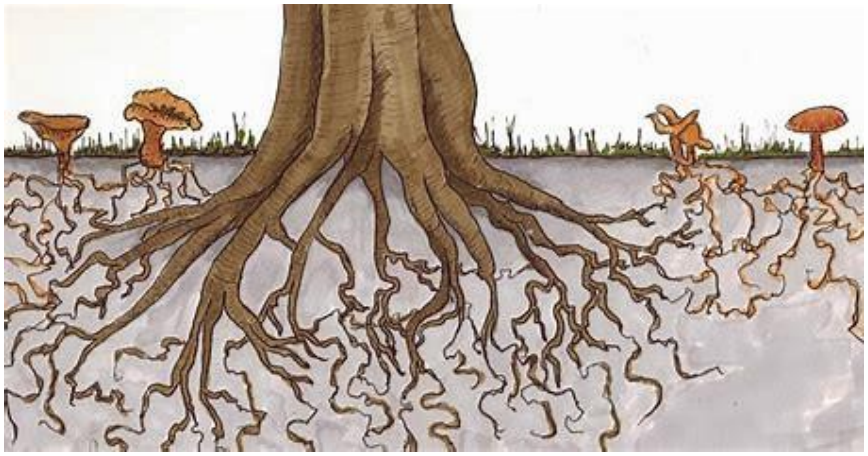


Mushroom reproduction

Sexual reproduction in mushrooms involves the formation of “seeds” known as spores, which are produced in structures called fruiting bodies. The spores are typically dispersed by wind, water, or other means to new locations where they can germinate and grow into new colonies. Some mushrooms reproduce asexually by budding

Mushroom natural services

Mushrooms are an important part of natural ecosystems, maintaining soil fertility by decomposing organic matter, facilitating the uptake of water and nutrients through mycorrhizal association with plant roots, and enhancing carbon sequestration. They create nutrients as well as making nutrients available. They make the air healthier and can “eat” toxic waste including pesticides, herbicides, metal and plastic.



Funga Fancies

- Fungi are responsible for plant and animal life on earth!
- Fungi are part of our microbiota!
- Fungi have minds!
- Lichens are a combination of fungi and a chlorophyll creating partner.
- Another example of fungi symbiosis is mycorrhizae—fungi and plant roots.
- Fungi break down rock to make soil, and helped plants develop roots. Fungi affect climate.
- Oh, whoever knew all the things fungi do!!!!

The Armillaria fungus, located on the Malheur National Forest, is the largest known living organism in the world, and is known as the Humongous Fungus.

Some molds perform valuable functions in our lives. They age and flavor cheeses, help make bread, ferment liquor, produce soy sauce, produce penicillin, and manufacture citric acid used to flavor soft drinks.

They also play important roles in biotechnology and food science in the production of various pigments, foods, beverages, antibiotics, pharmaceuticals and enzymes.

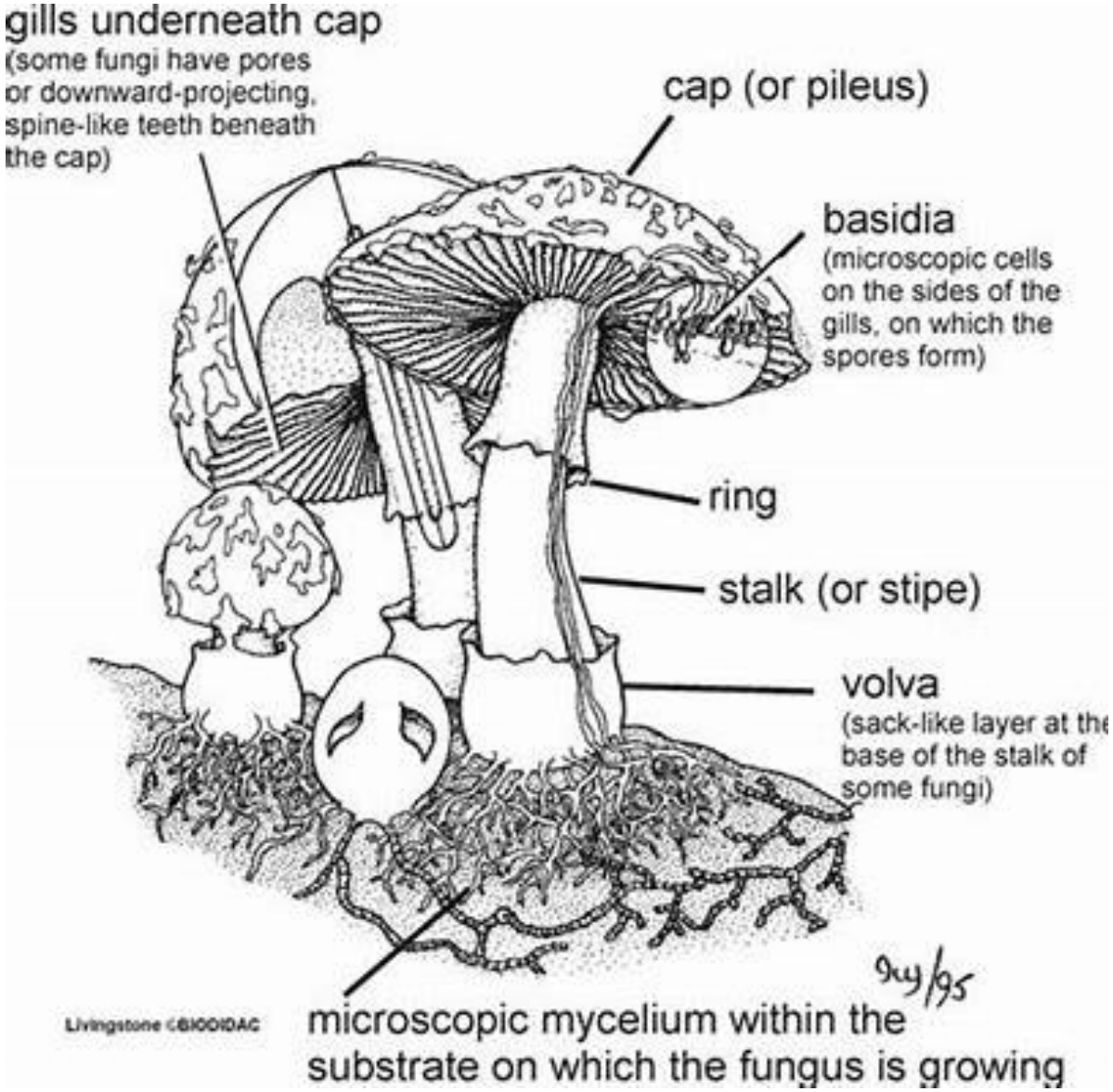
Nutritional yeast is used as a seasoning for popcorn, pasta, salad, or casserole dishes, as an umami flavor in soups, stews, or chili, as a savory, cheesy flavor in vegan sauces, as a thickener for soups and sauces, as an ingredient in smoothies, and as a pet food additive.

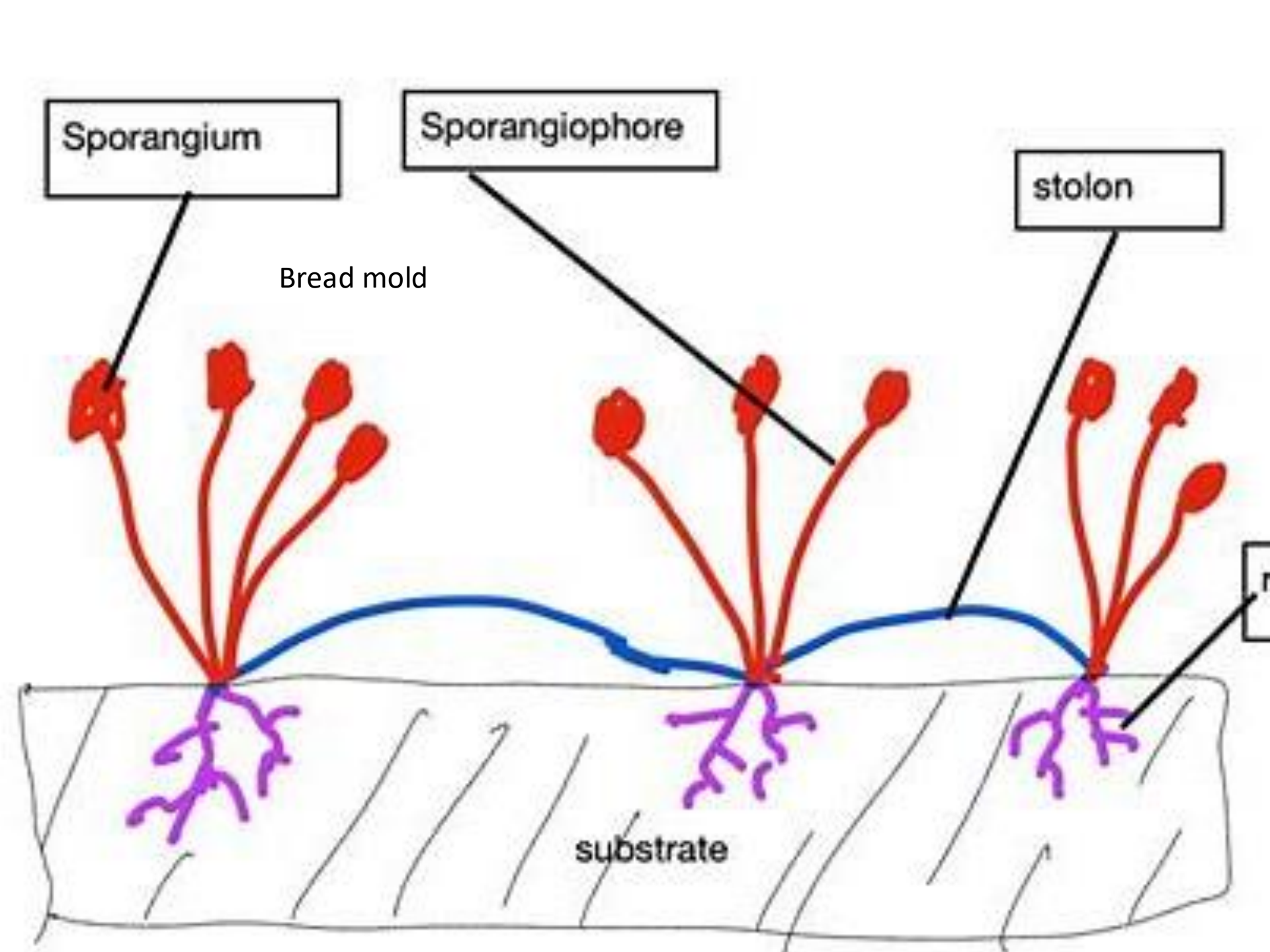
Yeast is used in baking, brewing, winemaking, pest control, and biofuels.

A lichen is a hybrid colony of algae or cyanobacteria living symbiotically among filaments of fungi species, along with a yeast embedded in the cortex or "skin", in a mutualistic relationship.

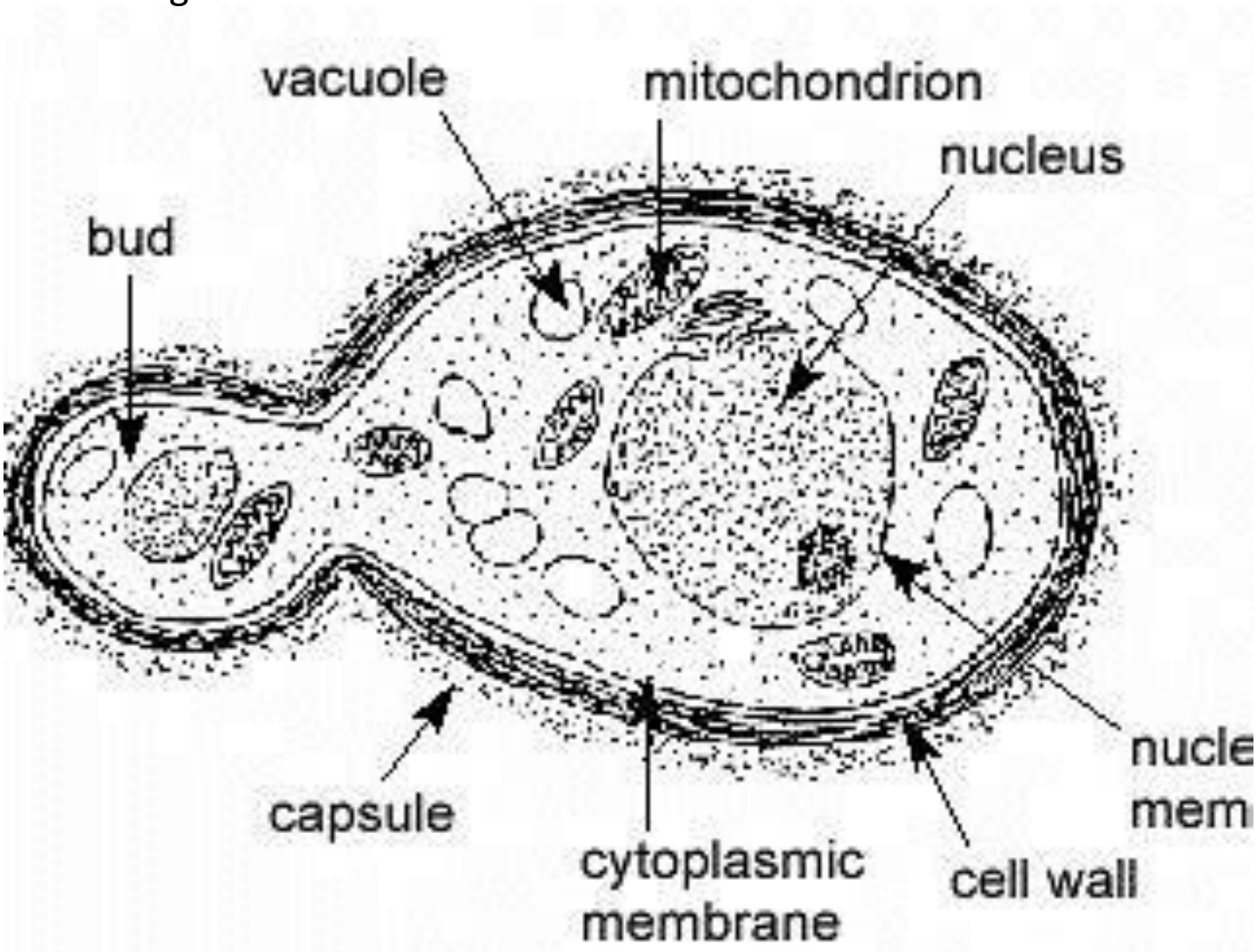
Molds are fungi with hyphae but not fruiting bodies—yeast are fungi without hyphae—and mushrooms are fungi with a fruiting body.

Mushroom anatomy




Sporangium
Sporangiophore
stolon
Bread mold
substrate

Yeast cell budding



Funga fingers

Fungus are critical to help plants survive.(spreading hyphae fingers)

Nutrients available to help them thrive! (clapping)

Singing mushroom—to *Coming Around the Mountain*

I'll be spreading out my hyphae underground. (pointing down)

That is where my mycelium is found. (pointing down)

Mushroom fruit with every spore, (dotting palm)

Reproduction's what they're for. (fingers pointing down)

I'll be spreading out my hyphae underground. (pointing down)

Mushroom detective

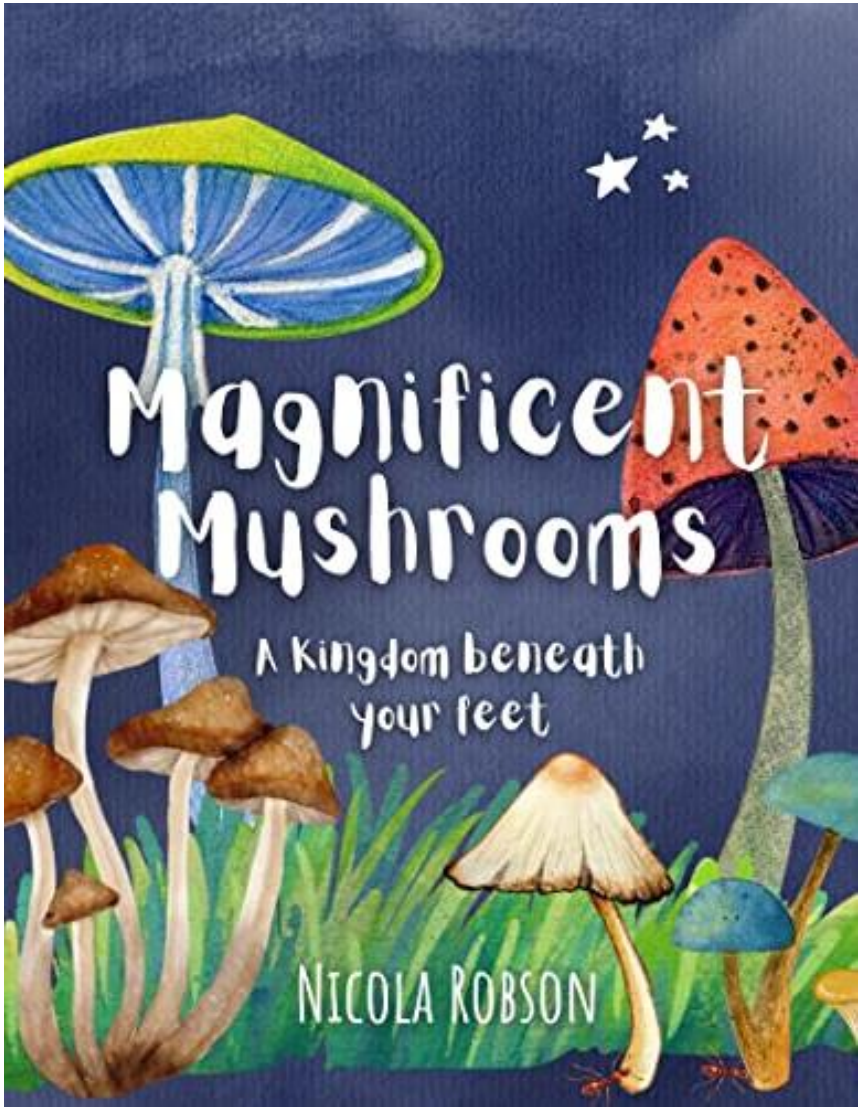
When can you find mushrooms in the park?

Engineer a mushroom!

Yummy marshmallow KitKat mushroom!

Books

https://www.youtube.com/watch?v=R6Q7HtEHuqA



https://www.youtube.com/watch?v=uikIxIPRwx0

Mushroom in the Rain