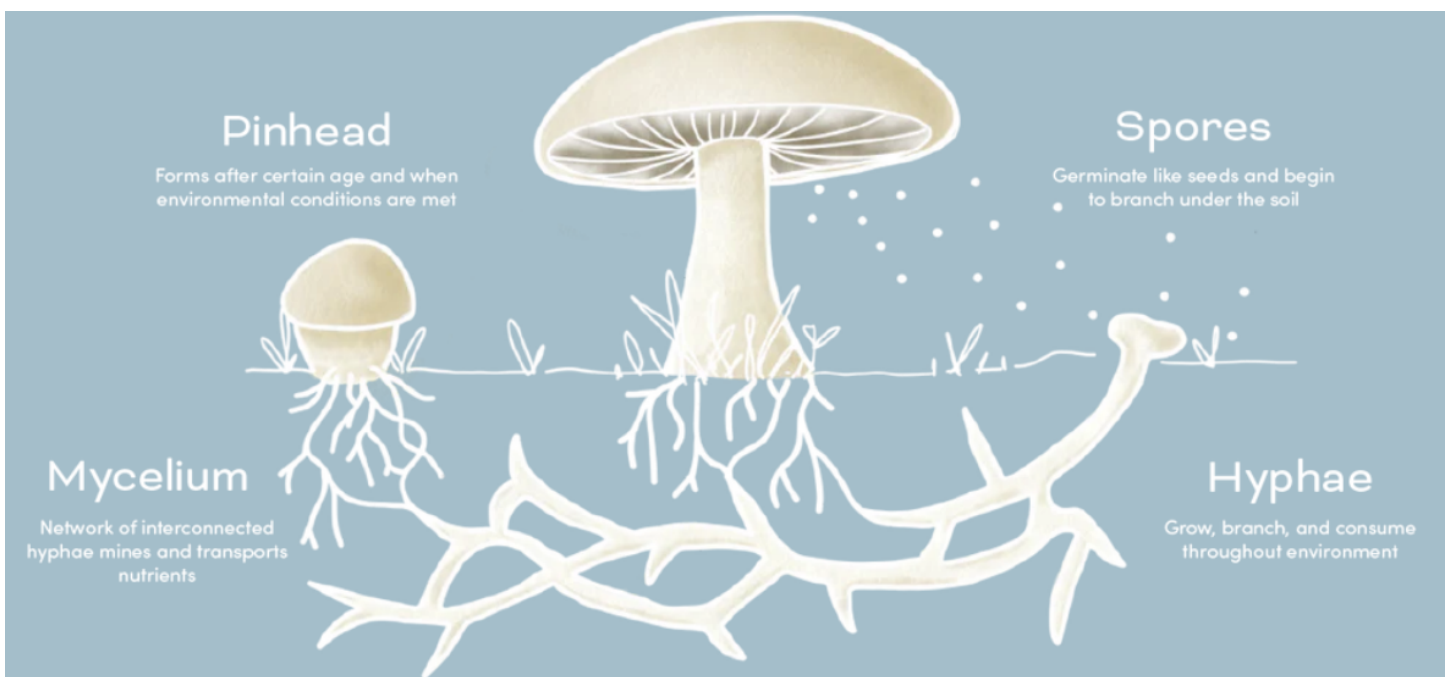
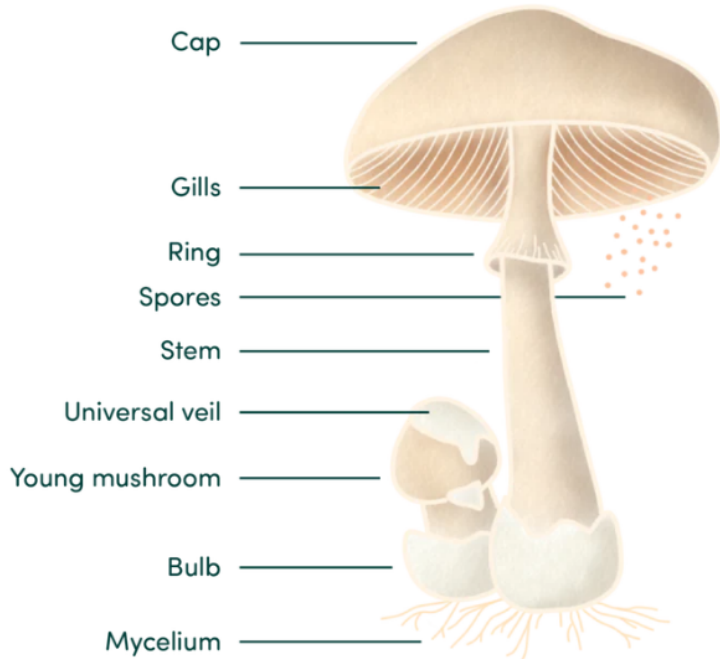
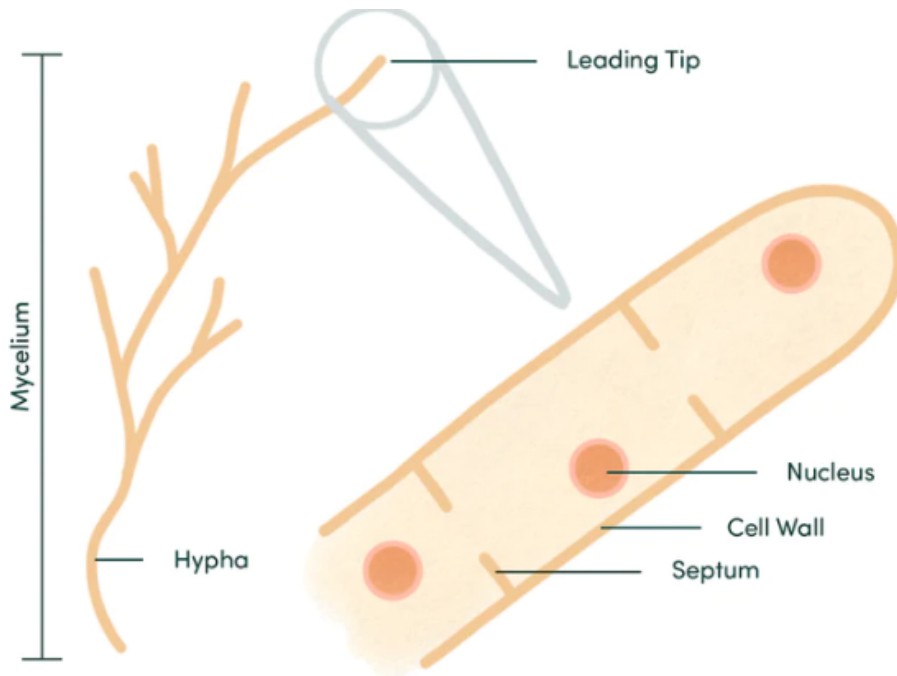


## Lesson 2: Fungi life cycle

### Objectives:

1. Identify key events in the fungi life cycle.
2. Apply the structure of fungi to its function of forming mycelium networks.
3. Represent written text in a visual way.





**Storyboard:** Below are descriptions at various parts of the fungi life cycle. *Sketch a visual* representation of what you read in each description. Feel free to draw scientific representations, or comics if you're feeling more abstract. The choice is yours! Simple sketches are welcome.

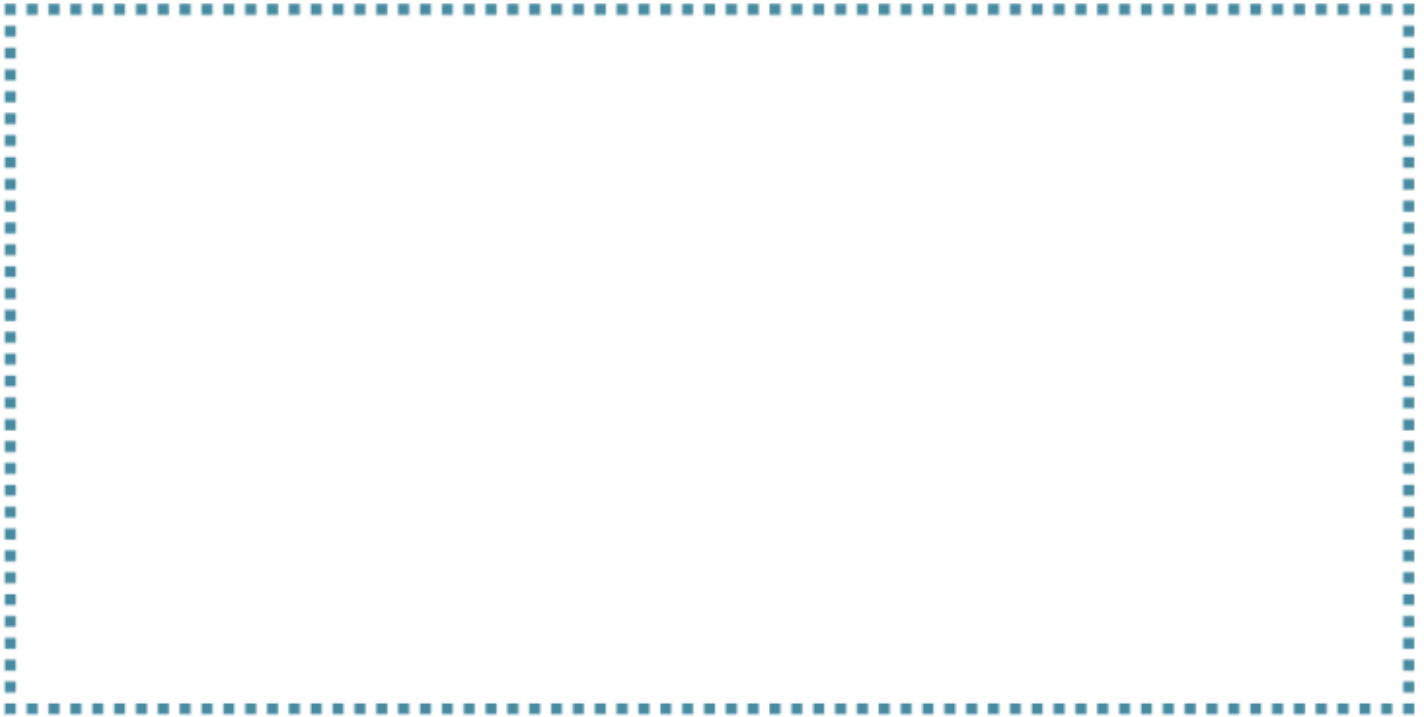
- A) When you see a full grown mushroom on the forest floor, that is only the tip of the iceberg. From an aerial perspective, you may only see the cap of the mushroom or pinhead. What's hidden under the soil is loads of mycelium.



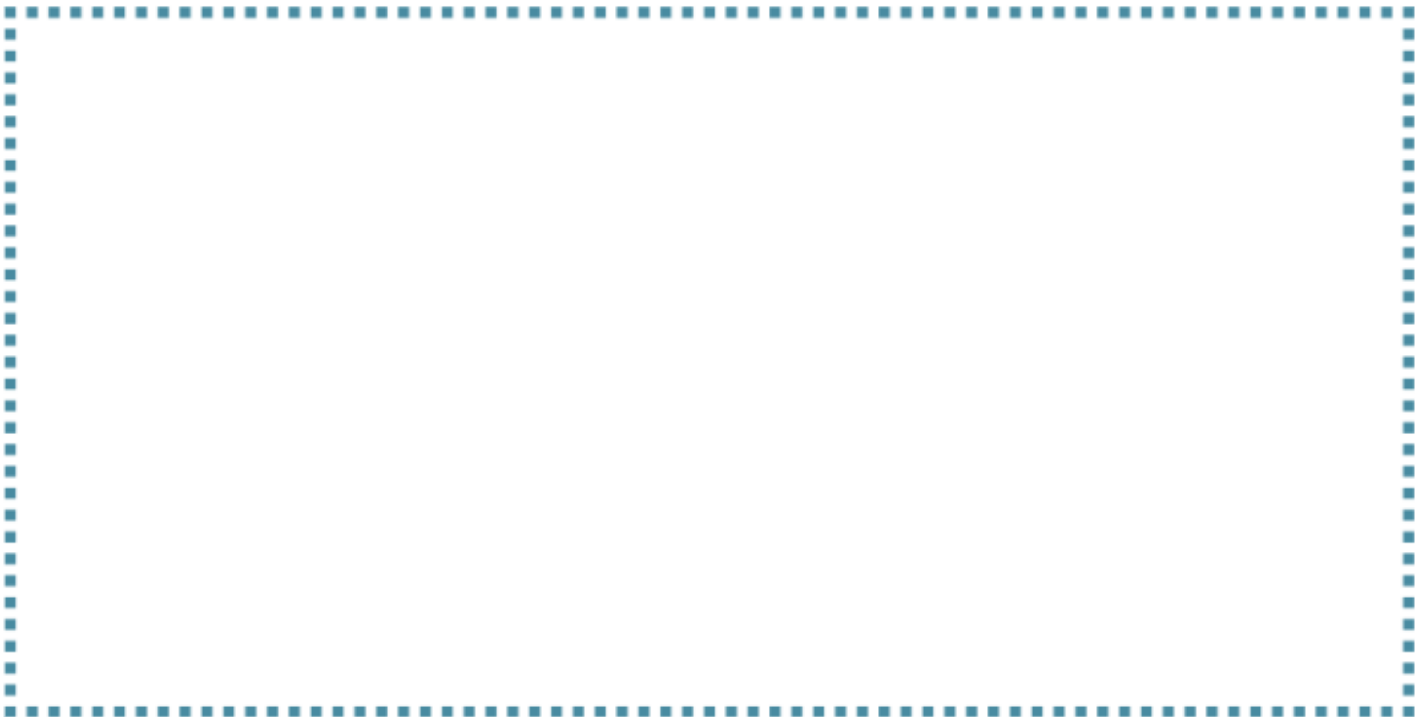
B) That mature mushroom will release spores from its gills (located in the underside of the mushroom cap). These spores contain all the DNA required to make new fungi. They are ready to grow!



C) When a spore is released, it will start to sprout hyphae. But conditions have to be right! Fungi generally like moderately warm temperatures and a lot of moisture and humidity. This is a long extension that will continue to grow and proliferate more and more.



D) The leading tip of the growing hyphae has a special structure located inside the end of it, called a Spitzenkorper. It is responsible for forming branches and shaping the direction of the hyphal growth.



E) Using the Spitzenkorper to help, the hyphae will continue growing and branching, looking for food sources near it. When it finds a food source, it will absorb the nutrients. Hyphae can even form connections with other hyphae so that they can share nutrients moving through their cells. Eventually the hyphae network is so big it is known as mycelium.



F) Mycelium can even have a symbiotic relationship with trees. This means that they both benefit from one another (like business partners!). *Mycelium will attach to the root of a tree.* The tree will transport sugars to the fungi for energy. In return, fungi provide the trees with essential minerals like nitrogen and phosphorus, which serve as building blocks to grow.



G) Mycelium will grow big enough to where it's ready to start reproducing. A small bulb (called a pinhead) will form at the end of a hyphae. This is like a tiny fruit body that will become a mushroom. Several of these may grow from the same mycelium. They will sprout from the soil.



H) The pinheads will continue to grow and develop spores inside that are waiting to be released. The pinhead will become a larger, mature mushroom. The cycle continues once more.



**Observe it live:**

Your instructor will provide you with live mycelium. Using a magnifying glass, explore the mycelium and try to identify the following:

- Cap
- Gills
- Stem
- Bulb
- Hyphae
- Mycelium

