

Name _____ Date _____ Period _____
Lab Partner _____

Mushroom Dissection Lab

Purpose: The purpose of this lab is to acquaint students with various parts of a typical fungus while practicing observation skills.

CAUTION: Although the mushrooms used in this lab are intended for food, **DO NOT EAT OR TASTE THE MUSHROOMS USED IN THE LAB.**

Background: Fungi are critical parts of most ecosystems and an important part of the diet of many students (and teachers). Mushrooms in the genus *Agaricus* are raised commercially and sold in most grocery stores. The mushroom is actually the fruiting body or reproductive structure of a fungus. In this lab activity students will locate and identify the principle parts of the typical mushroom and study them with both dissecting and compound light microscopes.

Materials: Mushroom

Compound Light Microscope

Forceps

Dissecting Microscope

Microscope slide Cover slip

Water

Eye Dropper

Paper towels

Procedure:

1. Get a mushroom from your teacher and place it on the paper towels in front of you. Examine it closely. On this lab draw a diagram of your mushroom, labeling the cap, stem and gills. If the gills are not visible, remove the tissue (it's called a veil) protecting them gently with your forceps. Be careful not to touch the gills with the forceps.
2. Grasp the cap firmly with one hand and the stem with the other hand. Gently wiggle and/or twist the stem until it breaks away from the cap.

3. Pinch the stem between your fingers until it breaks into two or more long pieces. Gently pull the pieces apart. The thin, hairlike filaments you will see where you split the stem are the hyphae. Place a small portion of the stem under scanning power of a microscope. What do they look like?

4. Place the stem pieces on a corner of your paper towel and turn your attention to the cap. Look at the underside of the cap to study the gills. Each gill is lined with thousands of small structures called basidia. Using your forceps, gently remove one gill from the cap. You will get better results if you GENTLY grasp the gill near where it attaches to the cap. Try to avoid touching the free edge, the one along the bottom of the gill, with your forceps. The basidia you want to see under the microscope are fragile and easily damaged if you aren't careful. Ask your teacher for assistance if you are having trouble removing a gill.

5. Place the gill on a microscope slide and use the standard procedure for preparing a wet mount.

6. Place the slide on the microscope and examine the gill under low power. Look at the edge of the gill that was not attached to the mushroom and look for the little finger-like projections. Switch the microscope to high power. Look at the fingerlike projections under high power. These are the basidia. If your mushroom is mature the basidia may have spores attached to them. Notice how tiny the basidia and the spores are. If you are having difficulty finding either basidia or spores, ask your instructor for assistance.

7. After completing your observations, clean off your slide and cover slip and place them as directed by your instructor. Wrap the mushroom pieces in your paper towel and dispose of them in the appropriate trash container. Return the microscope and dissecting scope to their proper locations.

Questions and Conclusions:

1. Draw a diagram of your mushroom here.
2. What do they look like?
3. The mushroom you examined contained basidia. To what major group of fungi does *Agaricus* belong?
4. Fungi reproduce by spores. How are spores structurally different from seeds?
5. How are spores dispersed?
6. What are the advantages and disadvantages of reproducing by spores?