

Investigating Fungi: Lichens Up Close

Lichens grow on rocks and tree trunks. A lichen is recognized as a single living thing. However, it is made up of two or more different organisms. A lichen contains a fungus and one or more types of algae. The algae may be cyanobacteria, green algae, or both.

The organisms that make up a lichen depend on each other for survival. They cannot live independently. The fungus absorbs nutrients and water that it shares with the algae. The algae make food through photosynthesis and share it with the fungus. In this lab, you will examine a lichen under the dissecting microscope.

Materials	safety goggles	slide
	lab coat or apron	eyedropper
	scissors	water
	samples of several different kinds of lichens	notebook
	forceps	dissecting microscope
		colored pencils



Procedure

1. Put on safety goggles and a lab coat or apron.
2. Use scissors to snip off a small piece of lichen. **Safety Alert: Take care when working with scissors.**
3. Use forceps to place the piece of lichen on a slide. Use the eyedropper to add a few drops of water to the lichen.
4. Put the slide on the microscope stage. Focus on low power. Move the slide so that you can see all sections of the lichen.
5. Switch the focus to high power. Look closely at the cut edge of the lichen.
6. In your notebook, draw the lichen under high power. Use colored pencils to indicate the colors you see.
7. Remove the slide from the microscope. Repeat Steps 2 through 6 with another type of lichen.

Cleanup/Disposal

Follow your teacher's instructions for cleanup and disposal of materials.

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Analysis

1. Under the microscope, some parts of the lichen are green. What makes up the green part of the lichen?

2. Under the microscope, some parts of the lichen are gray or white. What makes up these parts of the lichen?

Conclusions

1. Describe some of the ways in which lichens differ.

2. Do all lichens have the same amount of green material in them? _____
Why do you think this is so?

3. Lichens often grow on dry surfaces like rocks and tree trunks. How do you think they survive in these places?

Explore Further

Examine pieces of lichen under the compound light microscope.