



Discovery Day – Amazing Adaptations Craft Your Own Lichen

What you need

- Felt pieces, one in each of the following colors: green, gray (or brown), orange, and yellow
- Adult supervision for using sharp scissors to cut the felt
- 2 pipe cleaners cut into small pieces
- Glue
- Markers that can color on felt
- Specimen label (see final page)

Video Premieres
March 28, 2021
on Facebook!

Read the background information and then follow the steps below to craft your own lichen, come up with a creative scientific name for your “discovery,” and fill out its specimen label!

Background

A lichen is actually two organisms functioning as a single unit; lichens are fungi living in a symbiotic relationship with algae. Lichens come in all shapes, sizes, and colors. They may be *foliose*, or leaf-like, with easily observed upper and lower surfaces. These surfaces may be the same color or different colors, but the lower surfaces often have root-like structures for attaching to their substrate (bark, rocks, or soil). Foliose lichens are often easy to pull off their substrate, especially when they are wet. Then there are *crustose* lichens, which grow as a thin crust over rocks or bark; these kinds of lichens have only an upper surface and they are hard to remove from their substrate. The third kind of lichen are *fruticose* lichens; they are not crusty or leaf-like, but instead are bushy, branched, and look like tiny trees! They do not have different upper or lower surfaces. All three kinds of lichens reproduce by making tiny spores in round (“apothecia”) or elongate (“lirellae”) structures that develop on their outer surfaces. The one thing foliose, crustose, and fruticose lichens all have in common is a layer of algae, which often is green, like the felt piece in your kit. The algae are how lichens make their own food, like plants do – by photosynthesizing!



Image from onlypassionatecuriosity.com

Preparation

1. Gather your supplies listed above.
2. Be sure to have adult supervision while using sharp scissors.

What to do

1. Using sharp scissors, cut the felt pieces into funky shapes based on what type of lichen you’d like to create: crustose (unusual, wiggly shapes), foliose (circular to oblong shapes), or fruticose (any shape!).
2. If you’re making a crustose lichen, use a piece of gray felt to represent a substrate – such as a rock. Then would come the green layer which, in real life, would be a layer of algal cells surrounded by a cottony, white “medulla” of fungal cells, and then a “cortical” layer, which is the upper surface of the lichen and is often (but not always!) brightly colored. Add a few dots of glue to hold the felt layers together. Top your lichen by dotting it with a marker, or cut out round or elongate felt shapes to represent the structures where they would make their spores!
3. If you’re making a foliose lichen, start with a gray or brown felt piece as the substrate and then add multiple layers of different colors of felt to represent upper and lower cortical layers, sandwiching a green layer of felt for algae (the middle layer). You can even add cut-up pipe cleaner to represent rhizines, which are root-like structures that arise from the lower surface. Use glue to hold the rhizines in place, and add a few dots of glue to hold all the felt layers together.
4. If you’re making a fruticose lichen, start with a gray or brown felt layer as the substrate and then add a small bit of felt (any color) to represent the lichen’s holdfast. Then, get creative by using cut-up pipe cleaner to represent the bushy, tree-like structure! You can add thin strips of felt to give it more of a fluffy look. You will need to use glue to keep the pipe cleaner pieces and thin felt strips in place.



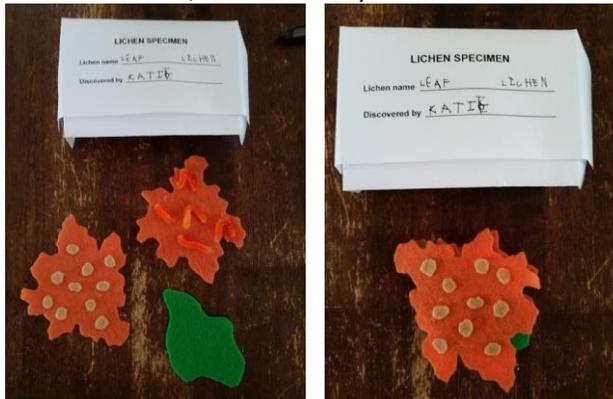
5. After your lichen has dried, use markers to draw in fungal hyphae or other patterns to make your lichen unique!
6. Think of a great name for your new species of lichen. Scientific names usually have two parts and are typically based on the ancient language Latin, but you can be as creative as you like in naming your crafted lichen specimen.
7. Finally, fill out the specimen label with the lichen's scientific name and your name. Congratulations, you've discovered a new species!

Examples

1. "Cookie Lichen, Discovered by Lydia"



2. "Leaf Lichen, Discovered by Katie"



3. "Spongibobbus squarrosus Lichen, Discovered by Caleb"

