

## **Lesson 1\*-Introduction to Lichens**

**Objective:** *Students will be able to explain what lichens are, where they live, and how they interact with people and ecosystems.*

To answer the following questions, go to <http://www.fs.fed.us/wildflowers/interesting/lichens/>  
Please use complete sentences and scientific vocabulary.

Click on “What are Lichens?”

1. What is the definition of a lichen?

2. Explain symbiosis in the context of a lichen. Describe the two partners and what is provided by each?

Click on “Habitats”

3. Describe the elements of good lichen habitat.

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4. On what substrates can lichen grow and how are lichens well adapted for these substrates?

Click on "Importance"

5. How can air pollution affect lichens and why is that important for us?

6. For what other conditions can lichen serve as a bioindicator or biomonitor? (see Hinds, p.28-31)

Click on "Lichens-Did You Know?"

7. How do humans use lichen? (Honors students see also: Hinds, p.22-31)

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8. What are some roles of lichens in ecosystems? What other organisms use them? How does the symbiotic nature of lichens make their role unusual?  
(See <http://fresc.usgs.gov/products/fs/fs-154-02.pdf> and [www.lichen.com/animals.html](http://www.lichen.com/animals.html))

\*Adapted in part from “What is a Lichen?” USDA Forest Service National Lichens and Air Quality Database and Clearinghouse <http://gis.nacse.org/lichenair/?page=lessons>

### **Other Resources**

[www.britishlichens.co.uk/whatarelichens.html](http://www.britishlichens.co.uk/whatarelichens.html)

[http://www.dnr.state.mn.us/young\\_naturalists/lichens/index.html](http://www.dnr.state.mn.us/young_naturalists/lichens/index.html) article about lichen, with teacher guide and excellent student worksheet

[http://files.dnr.state.mn.us/education\\_safety/education/teachers/activities/volunteer\\_studyguides/lichens\\_studyguide.pdf](http://files.dnr.state.mn.us/education_safety/education/teachers/activities/volunteer_studyguides/lichens_studyguide.pdf)

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