

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 three partners and what is provided by each? Check this reference for the newly discovered third partner. How has this changed our understanding of lichen?

<http://www.theatlantic.com/science/archive/2016/07/how-a-guy-from-a-montana-trailer-park-upturned-150-years-of-biology/491702/>

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)

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Click on “Lichens-Did You Know?”

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

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)

*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.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