

Lichen Project Research and Proposal

Field Biology

For this project, you will investigate lichens at Crescent Valley High School. Your goal will be to evaluate the correlation between lichens and one other abiotic or biotic factor. As you did with your water quality report, the document you create today will be a proposed plan for your study. You should work individually on this assignment. When you are done, please e-mail your work as a Microsoft Word attachment to dan.bregar@corvallis.k12.or.us with the subject line “per X *your name* lichen project proposal”.

To begin, you need to familiarize yourself with the types of lichen that are commonly found in our area and what type of factors influence lichens. We have done some of this in class by building our herbarium, but you must use Google to do internet research and discover more. You also might find some useful information on the web links on the [Lichen Identification Images](#) link. You should do a total of 20-30 minutes of research for information about lichens and other factors that may influence them. You must then answer the questions below, and your responses should be around 3-4 sentences for each question. To do a thorough job of researching this information, you should spend between 45 minutes and 1 hour on this part of the assignment.

1. Describe **in your own words** what types of factors are known to influence lichens.
2. Explain **in detail** some of the reasons why these factors could affect lichens.
3. Describe **in detail** some reasons why lichens are good indicators of air quality.

Now that you have a foundation of information about lichens and factors that can influence them, you can think about how you might use those factors to investigate a “what is the relationship between” question involving the habitat here at Crescent Valley. Complete the following template in order to create a proposed study. You will be carrying out this investigation during the next 2 weeks, so make sure to take into consideration time, weather, and seasonal factors that might affect your ability to collect data.

Proposed Lichen Study:

1. Brainstorm three biotic (living) factors and three abiotic (non-living) factors that might affect or be affected by lichens. List and describe these factors below:
 - a. Biotic Factors
 - i. _____
 - ii. _____
 - iii. _____
 - b. Abiotic Factors
 - i. _____
 - ii. _____
 - iii. _____

2. Pick ONE biotic or abiotic factor that you feel would be the most interesting and reasonable to study for your project. Make sure that this is a factor that you will definitely be able to observe and measure during the timeframe of the project (for example, "snow" would not be a good factor to look at because we can't guarantee that it will snow this winter). List this factor here: _____
3. Pick one characteristic to investigate. These characteristics should be the ones that you feel are most likely to affect or be affected by the biotic or abiotic factor you listed in question 2. List your lichen information that you will be gathering . I will be gathering information about the _____ of lichens. (i.e. number, types, etc..)
4. In "what is the relationship between" form, write a question that examines the interaction between lichen information you listed in question 3 and the biotic or abiotic factor you listed in question 2. Write your question here: What is the relationship between _____ of Lichen(s) in Crescent Valley and the _____?