Life Under Logs Activity

Grades: 2nd-8th

OVERVIEW:

In this activity students explore a fallen log or fallen tree branch to discover the lives and activities of decomposers. They reflect on the importance of decomposers in an ecosystem and practice observational skills.

Large fallen logs, fallen tree branches, rotting pieces of lumber, and even decamping leaves can be used for this activity, and please note the safety precautions next to the activity write-up to keep students and organisms safe.

NGSS Standards:

This activity supports the crosscutting concept of how we can observe and develop models to understand the world around us. By creating a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem, students can examine relationships and patterns in nature through observation.

This activity will help students work towards these *Performance Expectations:*

- 3-LS4-3 Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.
- 5-LS2-1 Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.
- MS-LS2-3 Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.

Intended Learning Outcomes:

Students will be able to…

- Explore fallen logs to find evidence of decomposers and living things
- Use observation and reasoning to make explanations about what they see on the log or under the log

Materials List:

- Life Under Logs Data Sheet (see pg. 3)
- Pencil
- Large Fallen log, fallen branches, rotting lumber, leaf pile, etc.

Safety Note! We want to discourage students from reaching into places that they can't see!! Remind students that logs are fragile homes for many organisms and not to tear them apart but turn them over carefully, put things back where you find them. Please be gentle with animals, especially salamanders, which are very delicate- bruise easily, and should only be handled with moist hands. When finished, put animals next to – not under - the places you found them and let them crawl back themselves.

Activity:

Find a place outside with several dead logs, large fallen limbs, decomposing tree stumps, or rotting pieces of lumber that are fairly close together. If you are limited in what you can find, any tree stump, fallen or downed tree material or even a pile of leaves could do.

Before touching the material, have students to make and record observations of the fallen logs or limbs. Have the students notice and record: color, texture, shapes, patterns, and even smells of the logs. After observing for a minute or two have the student to roll over a log or large limb and make more observations. Is anything moving? How do the colors, textures or patterns change? What does the space where the log was look like? What does the bottom of the log look like? Record your observations.

Carefully roll the log or limb back over to its original resting spot. Choose another log or limb to roll over and make a guess as to what you would expect to be the same and a guess to something that will be different when you roll the second log over.

Discussion or personal reflection questions:

- *What did you notice? Are you wondering about anything that you observed?*
- *What patterns did you observe between different logs?*
- *What did you see that was living?*
- *How is this log important to living things here? What is your evidence?*

For older grades:

- *Is this log an ecosystem? Why or why not?*
- *What role does this and other similar logs play in the ecosystem here? What is your evidence?*
- *What do you think are possible causes of holes, discoloration, etc. of the log? What evidence do you have for your hypothesis?*
- *How many different organisms can you think of that might have benefited from the tree/log you investigated?*
- *How might your observations be different between winter, summer, spring, or fall?*

Extension Options:

1. Give students a challenge to solve: This log is actually disappearing! What does that mean and what is causing it to disappear? Have students make additional observations of the log and write about what is causing it to "disappear." Students can reflect using these questions*: Describe what you noticed. What evidence did you find of the log disappearing? What do organisms that are breaking down the log get from the log?*
2. Turn this into an inquiry project. Will you find more macro invertebrates under a log, a rock, or in a stream? Collect, identify, count and record. Compare the results.

For decomposer keys you can check out this BEETLES Project resource- http://beetlesproject.org/cms/wp-content/uploads/2016/01/Case-of-the-Disappearing-Log.pdf

Life Under a Log Data Sheet

Date: Time of day: Location:

Draw a picture of the log, tree branch or area that you are observing	
Observations (You can draw or write about them)	
Living things that you observe on or around it	**Other interesting things**

Other Important Notes and Observations: