LEAF: Learning About Forests

POST-ACTION AUDIT, GRADES K-2

Consider contacting a local non-profit, business, government agency, college or university. Their involvement is a great way to connect to the community, inspire students, demonstrate career possibilities and share resource expertise. If you cannot conduct a study in the field please determine the best way to gather data, i.e. a phone call, an email or ideally a virtual conferencing tool with someone who works as a forester, forest ecologist, landscape architect, park planner, volunteer, etc. Contact your state forest service office for resource specialist contacts, resources or recommendations.

Invite parents and community members to participate in the auditing process. Students can take on the role of educator by working with volunteers on citizen science. This experience is a great way to build community.

Did the team/class work with resource experts and/or volunteers? ◯ Yes ◯ No
If yes, please list.

_____

Using the same sample group as in the baseline audit, conduct the survey again post action plan implementation. Insert the average response. On a scale from 1-10, 10 being the most important and 1 being the lease important,

- How important are trees to plants and animals? _____
- How important are trees to make the things we use every day? _____

REQUIRED DASHBOARD METRICS

1. What is the total worth, in dollars, of the trees in the forest study site? _____

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TABLE 1. DEFINING THE STUDY SITE

1. Confirm the GPS coordinates for your study site, by comparing them to the coordinates in the baseline audit. Use you smartphone's GPS or go to: https://www.whatsmygps.com to find the coordinates.	Latitude N _____ Longitude W _____
2. How many trees are in the forest study site?	◯ A few (less than 5) ◯ Some (between 6 and 12) ◯ Many (more than 12) ◯ Exact number if known _____
3. If there are dead trees on the study site, count the number of standing fallen dead trees.	☐ N/A _____ Standing dead trees (snags) _____ Fallen dead trees (logs)
4. Look at the trees in the study site. Are the trees all the same or do they look different?	◯ All trees are the same. ◯ All trees are different. ◯ Some are the same and some are different.
5. How is land used surrounding the study site? Check all that apply.	◯ Neighborhoods ◯ Parks/Public Green Space ◯ Businesses ◯ Undeveloped Land

CHART 1. TREE SPECIES DATA

Reassess the trees from the baseline audit and complete Chart 1. Some of this data will be needed for Table 6. As a reminders, refer to the Forest Study Site Measurement Guide for instructions on proper measurement techniques for trees.

Tree Species	Deciduous (D) or Evergreen (E)	Age Sprout, Seedling, Mature, or Snag	Tree Height in Feet	Tree Diameter (DBH) in Inches
Example: Sugar Maple	**D**	**Mature**	**17**	**28**
#1				
#2				
#3				

Think about the following questions as you summarize the information in Table and Chart 1.

1. How have the trees changed in the study site since the baseline observations?
2. Are there more trees in the study site now than when students first made observations?
3. Have students measurement skills improved?

TABLE 2. WEATHER

1. Identify the season during which data is being collected.	◯ Summer ◯ Fall ◯ Winter ◯ Spring
2. What is the temperature at the study site today?	_____ °F
3. What is the weather like outside at the study site today?	☐ sunny ☐ rainy ☐ windy ☐ cloudy ☐ snowy ☐ foggy ☐ partly sunny/cloudy ☐ hazy from pollution or fires _____ other
4. Is the weather the same or different than when the baseline audit was conducted?	◯ Same ◯ Different

Think about the following question as you summarize the data in Table 2.

1. Explain any weather impacts to trees observed by students between the baseline and post-action audit or between audit years.

TABLE 3. WATER QUALITY

1. Did the team/class conduct water quality tests in the baseline audit? **If yes, conduct the following water quality tests.**	◯ Yes ◯ No
2. What type of water is observed? *Seasonal pools of water are called vernal pools and are pools of standing water only in the spring. These pools are important nurseries for many amphibian species.	_____ seasonal pool* _____ permanent pooling water _____ flowing water (stream, creek, etc.)
3. As a team/class write five words to describe the appearance of the water source.	
4. pH (strips or probe) Test 1 _____ pH Level Test 2 _____ pH Level Test 3 _____ pH Level ◯ Acidic ◯ Neutral ◯ Basic	5. Temperature (thermometer or probe) Test 1 _____°F Test 2 _____°F Test 3 _____°F

Think about the following questions as you summarize the data in Table 3.

1. Review why it is important to observe and test water quality near tree systems?
2. Did the appearance of the water source look different from the baseline audit? If the appearance is different then why might the water appear different?
3. Were pH and/or temperature the same or different from the baseline audit? Why or why not?

TABLE 4. SOIL QUALITY

<table>
<tr><td colspan="2">1. Soil Temperature – 10 cm measurement

_____° F

_____° F

_____° F

   </td></tr>
<tr><td>2. Soil Consistence

☐ hard ☐ loose ☐ plastic and sticky

☐ firm (in between hard and loose)</td><td>3. Soil pH

Test 1 _____ pH Level

Test 2 _____ pH Level

Test 3 _____ pH Level

◯ Acidic ◯ Neutral ◯ Basic</td></tr>
<tr><td>Use a soil tube to take soil sample. Observe and describe the sample using the senses. Do not taste the soil. Describe how the soil looks, feels and smells. Write five words to describe the soil.</td><td></td></tr>
</table>

Think about the following questions as you summarize the data in Table 4.

1. Review why it is important to observe and test soil quality around trees?
2. How has the soil changed, if at all, since the baseline audit? Or how have student's ability to make observations improved since the baseline audit?

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TABLE 5. WILDLIFE - GENERAL

1. Are there animals present at the forest study site?	◯ Yes ◯ No
2. Did students see animals in the following families? Check all that apply, then fill in Chart 2. Wildlife-Animal Observations.	☐ mammals ☐ birds ☐ insects ☐ reptiles ☐ amphibians
3. Besides the presence of an animal(s), what other evidence did students observe at the study site? Check all that apply.	☐ feathers ☐ nests ☐ scat/poop ☐ tracks ☐ eggs ☐ fur or hair ☐ exoskeleton ☐ chrysalis or cocoon ☐ ground or tree dwellings _____other
4. Did students observe other plant types, besides trees, at the study site?	◯ Yes ◯ No
5. Did students see plants from the following groups? Check all that apply, then fill in Chart 3. Wildlife-Plant Observations.	☐ bushes ☐ grasses ☐ wildflowers ☐ ferns ☐ mosses ☐ other (fungi)

Think about the following questions as you summarize the information in Table 5.

1. **Are student's observations skills improved, meaning are students identifying more types of plants and animals? Are students able to identify them by name?**
2. Describe one action the team/class took to improve wildlife habitat in the study site?

TABLE 6. TREE WORTH

Use the *i-Tree MyTree Calculator*, https://mytree.itreetools.org/#/, to collect the data below. Some data will be used as metrics for your school's Eco-Schools USA Dashboard.

Use the information from Chart 1 to begin populating the table below. Next input the requested data into the online calculator at i-T*ree MyTree Calculator*. If you would like to provide data for more trees or you would like to calculate multiple trees for a species, please enter the information into an Excel spreadsheet or other document and submit as evidence when applying for an Eco-Schools award.

Tree Species	Tree Diameter in Inches (in.)	Stormwater Runoff Avoided in Gallons (gal.)	Annual Overall Tree Benefit in Dollars ($)
Example: Single Maple	**12**	**203**	**$2**
TOTALS			

Think about the following questions as you summarize the information in Table 6.

1. Did students equate trees to a value other than products, such as paper, furniture, etc.?
2. Worth is not always defined by numbers or monetarily. How have trees been valued in cultures native to the area? What spiritual, healing or familial value did/do trees have?
3. What are 1-2 local, state or national tree campaigns teams/students can support?

Continued on the next page.

Review of All Data

1. Based on what is known and has been learned, what conclusions can be made about trees based on the data and other evidence students collected?
2. What **patterns** did students identify while collecting data in the study site?
3. **Explain how students used the structure and function** of trees to better understand trees as a system or a system of trees.
4. What connections did students make between:
    - Weather and trees?
    - Wildlife habitat and trees?