



Water-Themed Lessons & Activities

from **FAIRMOUNT WATER WORKS**

Tree Diversity Booklet - About Trees

Introduction:

Trees provide shade, help filter and moisturize the air, create beauty and are an important tool to reduce stormwater runoff by slowing rainwater so it will soak into the ground. Trees then take up the water and release much of it through their leaves back into the air. Reducing runoff improves the quality of our source water. To support tree health, landscape engineers plant different kinds of street trees. Diseases and insects are often a problem for one specific type of tree and will leave other types alone. Having a diversity of tree species increases the resilience of the tree community. Students will calculate tree diversity and document what they find through leaf rubbings and drawing.

Note: This activity requires the access to trees in the neighborhood.

Learning Objectives:

Students will be able to

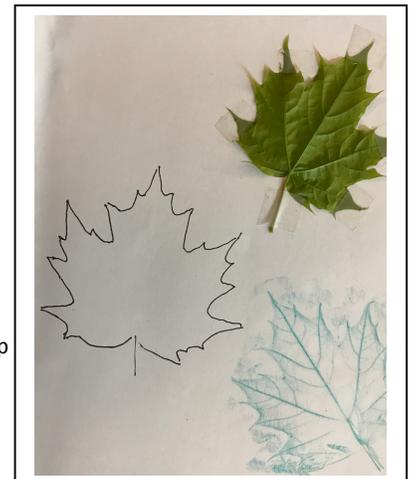
- **Observe** the difference between trees in their neighborhood
- **Document** the diversity through leaf rubbings and drawings
- **Calculate** the percentage of tree diversity

Materials:

- Paper (suggested 10 sheets), crayons, pencil or marker
 - clipboard, folder for collected leaves, bag for holding paper and folder
 - clear tape, stapler
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Activity Procedure:

1. Walk around your block or park that have trees. At your first tree make a leaf rubbing using crayon, outline the leaf with pencil or marker, and save the leaf so you can tape it on your page when you return home.
 - Leaf rubbing: pick up a leaf from the ground. Turn it over, lay it on your clipboard and cover it with a sheet of paper so that the leaf is in one corner of the paper. With the side of a crayon (you can peel off the paper covering), gently rub over where the leaf is positioned under the paper. It is better to rub lightly and repeatedly until an image of the entire leaf appears.
 - On the same paper turn your leaf over and on top of the page outline your leaf with pencil or marker leaving room to tape it afterwards. If the leaf is very large, you can outline over the rubbing.
 - Put the leaf in your folder for adding to your paper later.
2. Continue with the next tree. If the leaf shapes are different than your first tree repeat the activity on another sheet of paper. If the leaf shapes are the same, put a little check on the top page and repeat every time you find a matching tree.



3. When you return home, see if you can match the leaves in your folder to your rubbings and outline. Once completed, staple your book together.
4. Count the number of different kinds of trees you observed. Calculate the percentage of the diversity.
Divide the number of different trees by the total count of trees and multiply by 100 (move 2 decimal places to the right) to get % for your site. Are more than half your trees different?

Example: $\frac{6 \text{ different trees}}{10 \text{ trees}} = 0.60 = 60\%$

Resource for Tree Identification

There are a number of apps and online identification tools that are free and help with plant identification. You will need to photograph your leaf for the apps.

Pl@nNet <https://plantnet.org/en/>

PlantSnap www.plantsnap.com

iNaturalist <https://www.inaturalist.org/>

Suggested Age Level: 3rd - 8th

Suggested Subject Area (s): Environmental Studies / Biology / Math