

Research

Here is a question we invite you to research:

To what extent are trees valuable filters in my neighborhood?

Here is how you can answer it scientifically (Procedure). Check out the [Methods & Analysis Video](#)  or use the instructions below.

- ▲ Get your journal and a pencil (or your electronic device).
- ▲ Get a tape measure or ruler.
- ▲ Pick a tree near your home, and measure and record the trunk's diameter (a straight line from side to side) or circumference (all the way around) in inches.
- ▲ Note your tree's condition (health): dead, dying, critical, poor, fair, good, or excellent.
- ▲ Note your tree's sun exposure: full, partial, or shade.
- ▲ Find a low-hanging leaf or one on the ground from that same tree, and trace/draw the leaf or take a picture.
- ▲ Next, try to identify your tree's species by comparing your leaf to the leaf photos here (Neighborhood Leaves Guide at the end of the journal, p. 7). These leaves are from common street trees, but if your leaf is not on this list, then you can compare it to the leaves in this bigger booklet ([MD leaf guide](#)) or ask an adult for help.
- ▲ Finally, take note of any other observations about the tree and its surroundings.

Input	Trees
Location	
Type of Tree	circle one: Existing, New Planting, Memorial
Tree Species	
Tree Condition	circle one: Dead, Dying, Critical, Poor, Fair, Good, Excellent
Trunk Size	_____ inches; circle one: Diameter, Circumference
Sun Exposure	circle one: Full, Partial, Shade
Your Observations	

Trees

Analysis

- ▲ Go to [MyTree](#) and follow the instructions on the site or in the [Methods & Analysis video](#)  to input your tree data, and record your results below.

Total benefits for this year	\$	
CO ₂ sequestered	\$	
CO ₂ equivalent carbon		lbs.
Runoff avoided		gallons

- ▲ As a reminder, the tree's benefits listed here are super valuable.

CO₂ sequestration: This removal of carbon dioxide from the air helps all animals (including humans) breathe easier. It prevents common respiratory problems like asthma, and it helps to stop climate change.

Runoff Avoided: Reducing stormwater, like rain and snowmelt in developed areas, keeps our streets from flooding. This keeps trash out of your local streams and prevents sewer systems from overflowing.

- ▲ How does your total tree value for this year compare to the value of Mr. Marquise's tree (\$0.27) from the [Methods & Analysis Video](#)  ?

- ▲ Check out the NorthBay Trees page at the end of the journal to see how our 500+ planted trees are saving over \$3000 per year!

FUN FACTS

Scientists have learned that trees communicate and transfer nutrients through root and fungal networks: *The Wood Wide Web*.

[Learn more here.](#)

A native oak tree can support over 500 species of caterpillars.

[Learn more here.](#)

Trees may communicate through the air using pheromones.

[Learn more here.](#)

Reflection

Reflection questions: Please tell us what you found. Write your conclusion and include responses to the following:

▲ What did you do?

▲ What did you discover? (Use your data as evidence)

▲ How could your results have been different with a different tree species, diameter, condition, or exposure to sunlight?

▲ Why is sequestering CO₂ and reducing stormwater important?

▲ How do you think including building energy savings or more trees in your MyTree dataset could change your results?

▲ What else are you wondering about trees?

And now it is time for **ACTION!** What will you do?

Here are some ideas! Pick one or more, do it (or them), then tell us about it by emailing us at: nbmedia@northbayadventure.org, follow us on social media, & #NorthBayEducation your posts.

- ▲ Teach someone about trees.
- ▲ Teach someone about value.
- ▲ Teach someone about filters.
- ▲ Learn more about trees.
- ▲ Take care of trees around your home.
- ▲ Plant a tree at home.
- ▲ Share your leaf picture and tree data on social media.
- ▲ Take creative photos of trees and their leaves and turn them into shareable art.
- ▲ Join a community tree planting event.
- ▲ Check out the “Want a bigger challenge?” section to level up your tree game and learn how much money your tree is really saving.

Extension!

- ▲ If the tree you studied is near a building, return to your [MyTree](#) data online and enter in the building information to see how your tree helps to save energy. This will increase the overall monetary value of your tree.
- ▲ Add more trees to your MyTree dataset to compare their results and see their total benefits.

Share your data section [HERE!](#)

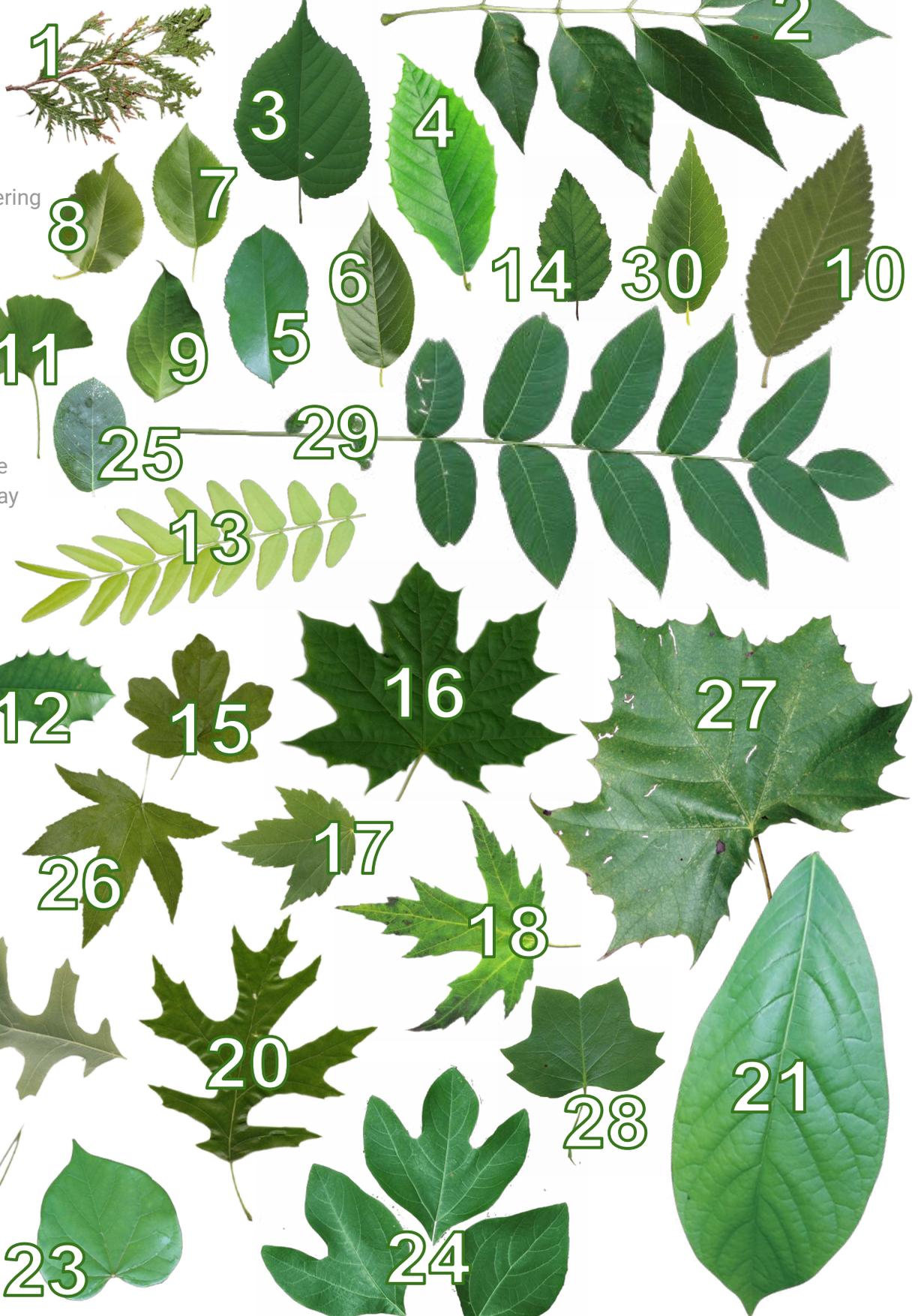


Don't forget to head back to our website to share your data with NorthBay and watch the [Trees Wrap video here.](#)

NorthBay Trees At Home

Neighborhood Leaf Guide

1. Arborvitae
2. Ash
3. Basswood
4. Beech
5. Cherry, Black
6. Cherry, Flowering
7. Crabapple
8. Pear
9. Dogwood
10. Elm
11. Ginkgo
12. Holly
13. Honeylocust
14. Hornbeam
15. Maple, Hedge
16. Maple, Norway
17. Maple, Red
18. Maple, Silver
19. Oak, Pin
20. Oak, Red
21. Pawpaw
22. Pine
23. Redbud
24. Sassafras
25. Serviceberry
26. Sweetgum
27. Sycamore
28. Tuliptree
29. Walnut
30. Zelkova



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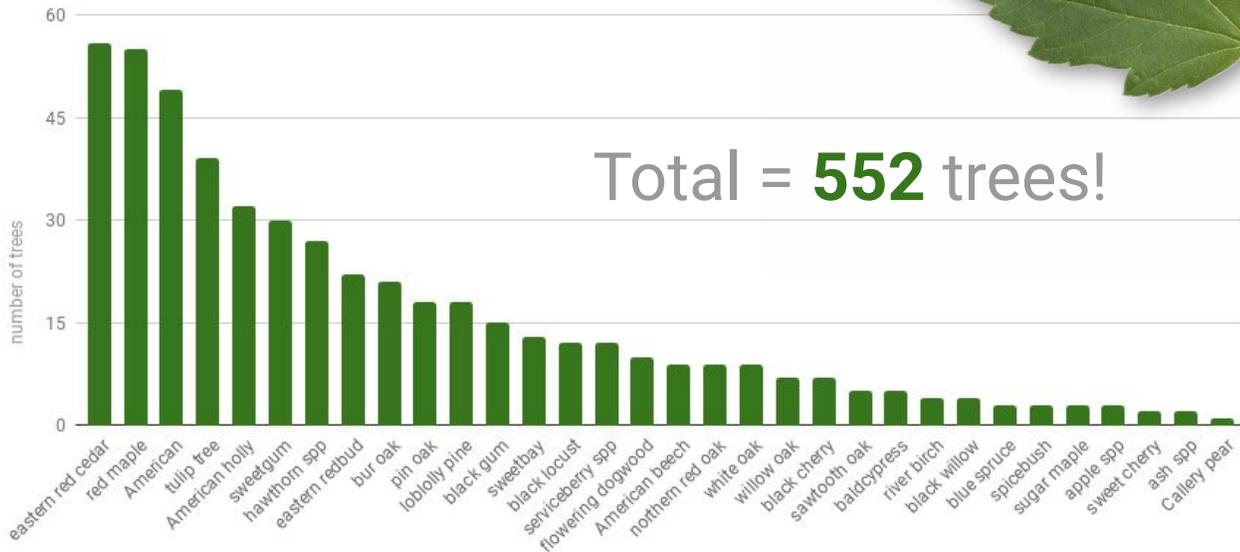
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NorthBay Trees At Home

NorthBay Ornamental Trees



Tree Species Abundance



- ❖ **32** total species
- ❖ **90%** native population
- ❖ **19,000 lbs** of CO₂ sequestered annually
- ❖ **\$442/year** (CO₂ value)



170,000 gallons of stormwater intercepted
36,000 gallons of runoff avoided
\$323/year value



147 lbs of other air pollutants sequestered
\$301/year value avoided healthcare costs



\$2,562 building heating/cooling energy savings