Lesson 3: How Much Junk is in the Trunk?

Science Lessons | Grades 6-8

CALIFORNIA ARBOR WEEK
MARCH 7 - 14

Overview:
This activity helps students identify a tree in their own school or neighborhood and calculate how much carbon that tree is currently storing.

Materials:
- An outdoor location with at least one tree
- Clipboards and paper to record measurements and make sketches
- Tape measure
- Internet access (**https://urbantreekey.calpoly.edu** and **http://www.treebenefits.com/calculator**)

Gathering Samples:
Carbon sequestration quantity depends on the size and species of a tree. Once you select a tree for this project, you'll need to determine the species. In order to identify your tree, you will need to collect healthy leaf samples. Be sure to collect multiple leaves that are naturally connected. You may also collect needles or branches of needles.

Sketch:
Once you have collected the leaves, sketch the pattern of the bark of the tree on a separate piece of paper. Be detailed and make note of the color as best as you can. This will help in identifying the tree.

Identify Your Tree:
Now you have what you need to identify your tree. Use the following website to help identify the tree you have examined: **https://urbantreekey.calpoly.edu**

What is the name of your tree? _____

Measure:
Using the tape measure and a partner, record the circumference of the trunk at a height of 4 feet, 6 inches above the ground:

Circumference: _____ inches

Diameter:_____inches (Diameter = Circumference divided by 3.14)

How much carbon is your tree currently storing?

Using this website (**http://www.treebenefits.com/calculator**), use the type of tree and diameter of your tree to see all the benefits your tree is offering in your urban area.

Record some of the data that you see below:

Carbon Sequestered: _____

Carbon Avoided:_____

How many trees would it take to balance the emissions of 1 car? _____

Take it further:

What are some of the other benefits your tree offers? _____

_____

_____

Did the trees of other groups have different benefits than the tree you observed? _____

_____

_____

How do you think the health of the tree effects its ability to sequester carbon? _____

_____

_____

Why is it important for carbon to be sequestered or avoided?_____

_____

_____

What are the effects of too much carbon in our atmosphere? _____

_____

_____

What is happening?

Trees play a large role in their ability to sequester carbon. Is there a tree on your campus that sequesters more carbon than others? The composition of the wood, its density, and trunk area for storage can increase or decrease the tree's storage capacity.

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