

# Middle School Unit Overview

## Science Lessons | Grades 6-8

**Standards:** MS-LS1-C (Organization & Matter & Energy Flow in Organisms), PSD3.D (Energy in Chemical Processes & Everyday Life), MS-LS1-1-5 (Ecosystems: Interactions, Energy, & Dynamics)



### Overview:

This lesson set is a study of how trees sequester carbon and whether the urban environment affects trees' ability to do this.

### Note to the Teacher:

This unit will challenge students to look at the whole tree and its functions. Although most students at the middle school level have some knowledge of photosynthesis and the benefits of trees, their knowledge of the entire tree and its surrounding ecosystem may be limited. In addition, students may be familiar with the term *global warming* but not understand that it relates to excessive levels of carbon in the atmosphere. The carbon cycle is natural, as is the existence of carbon throughout our atmosphere, but carbon storage and/or sequestration is critical to creating balance in this system. These activities will enable students to assess a tree in an urban environment while developing understanding of the critical role we play in helping trees do their job to sequester and store carbon.

## Lessons in this Unit:

### Lesson 1: Trees Matter

An overview of trees' ability to sequester carbon in all parts of the tree.

### Lesson 2: Where is the Carbon in the Leaf?

A lab experiment that identifies where and how much carbon is stored in a leaf.

### Lesson 3: How Much Junk is in the Trunk?

This activity allows students to identify a tree and discover its potential for carbon storage.

### Lesson 4: Roots Really Do Matter

An overview of the ecosystem around the roots of a tree through a group learning lesson.

### Lesson 5: Organic Matter & Soil Composition

A lab experiment to test the amount of organic matter in a soil sample.

**Unit Conclusion:** Students will record, summarize, and reflect on what they've learned.

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