Tree Identification

Grades: 5 - 12

Standards: 1.ESS.1.2 / 1.LS.3.1 / 3.LS.4.2

Setting: Outdoors

Purpose of Lesson:
Students will be able to:
- Identify the common trees in Boston.
- Discuss the benefits of trees.
- Understand the field of urban forestry and the work done by those in the field.
- Teach students how to identify trees.

Essential Questions:
1. What is urban forestry?
2. What is tree blindness?
3. How do I identify a tree by its leaves?
4. What are the different kinds of leaves?
5. What trees will I see most in Boston?

Materials:
- Tree ID Guide
- Pen
- Notebook

Program Session Schedule [~60 mins]:
Self Introduction & Group Check-ins: 5 mins
Discussion of lesson topic: 30 mins
Activity: 20 mins
Review & Wrap-Up: 10 mins

Lesson Implementation

Self-Introduction & Group Check-ins (5 mins): We introduce ourselves and our organization, who we are, what we do, and our goal for today's lesson. Use this time to let the students share their names and grades.

Guided Discussion (30 mins):
➢ What is urban forestry and Tree Equity?
  ○ "What does an urban forest look like?"
    ■ Allow students to think about this term and try defining it before providing this definition:
      ● A forest or collection of trees that grow in a city.

- ○ "What is Tree Equity?"
  - ■ Tree Equity ensures fair access to the benefits of trees, especially in low-income and minority communities. It addresses disparities in tree distribution within communities.'

- ○ What is "tree blindness?"
  - ■ Most people go about their everyday lives without even noticing the trees outside their homes, offices, or schools, let alone knowing anything about their importance or biology.

➢ What are the benefits of trees, or why are trees so important:
- ○ "Does anyone here have a favorite tree?"
- ○ "Can you tell me why you like trees?"
- ○ "So, who can tell me why trees are important? Maybe just give me one benefit that trees provide us?"
- ○ ees provide us?"
  - ■ Share some of the more essential benefits trees provide and why they are important in an urban space.
    - ● Examples: Urban heat island, noise pollution, pollution from high traffic, etc.

➢ By possessing the skill to recognize trees, we aim to reduce the likelihood of tree blindness among people. Certain identifying features include leaves, fruits, and color, which enable their survival and reproduction methods.

➢ Now, explain some basic points of tree biology, including:
- ○ Deciduous vs evergreen trees
  - ■ Deciduous trees: These trees are ones where leaves "fall off" during the fall months and return in the spring. (i.e., Maple, Oak, Honey Locust)
  - ■ Evergreen trees: These trees do not lose their leaves during the fall (i.e. Fir, Pine, Spruce)
- ○ Simple vs. compound leaves
  - ■ Simple leaves: Leaves are one piece divided down the middle by the midrib (i.e., maple, oak, Gingko).
  - ■ Compound Leaves consist of several or many distinct parts (leaflets) attached to a single stem (e.g., Honey Locust).
- ○ Palmately vs. pinnately leaves
  - ■ Palmate Leaves: Leaves in the shape of an open hand, resembling a palm.
  - ■ Pinnate Leaves: A compound leaf with a central stem with small leaves arranged on either side.
- ○ The anatomy of a leaf
  - ■ Midrib
  - ■ Lobes
  - ■ Sinuses
  - ■ Stem

Activity; "Race to the Board" (15 - 20 mins):
➢ Students will play a game that allows them to apply the tree ID knowledge they just learned.

➢ The classes will be separated into halves (or more groups, depending on the class size), and each group will be lined up in front of the board. The board will be divided into 2 sides for each group.

➢ Using the Slides, students will be shown a tree species that they need to identify as a group. They will then race to the board to write the species' name. The first team to do so correctly wins.
  ○ The slideshow will include 10 tree species; the teacher can decide how many tree species they will cycle through.
  ○ Tree ID guides may also be used for this activity.

➢ If the teacher would like to, the activity could also be flipped by calling out a tree species name and having students race to draw it.

Review & Wrap-Up (5 - 10 mins):
➢ After students have had enough time to identify trees independently, have the groups share some of the species they found.

➢ Ask a few questions about their exploration to engage further:
  ○ What was your favorite tree that you identified?
  ○ What did you think of the guides that we used? Were they helpful?
  ○ What leaf did you draw, and what are some of its characteristics?
  ○ Ask if they will continue to identify trees on their way to different places and share their knowledge