Summary

Students will create maps of their schoolyard (or closest treed area), categorizing the diversity of trees they find, and designing a plan (real or imaginary) for enhancing the environmental value of the schoolyard.

NOTE: This activity is best used after students have already learned how to use a dichotomous key for tree and plant identification.

Activity Information

Level: Grades 6 and 7
Subject: Life Science: Diversity of Life, Interactions Within Ecosystems; Visual Arts
Estimated duration: One 60 minute class period for discussion and survey, a second class period to prepare map and design plan, one 60 minute class for presentations
Materials: clipboard, large paper for drawing maps, pencils, diameter tape measure, and pencil crayons

Learning Outcomes

Students will:
- Classify according to several attributes and create a chart that shows the method of classifying.
- Describe the role of a common classification system for living things.
- Identify strengths and weaknesses of different methods of collection and displaying data.
- Describe interactions between biotic and abiotic factors in an ecosystem.

Teacher Background

If you visited Caledon East Public School in Caledon East, Ontario, you would see all kinds of trees that students can explore when they head outside. There are black locusts, silver and sugar maple, white ash, basswood, and some spruce and a variety of pine. However, if you asked the students and staff, they would most likely tell you that they would like to see more trees in their schoolyard. Why?

Trees provide a variety of values to any area. We tend to assume that trees are valuable in rural areas because they are a source for wood and paper products. They give us forests in which to hike, ski and snowshoe, and they provide habitat for a host of wildlife species. But even in urban settings, forests and trees hold great value. Urban forests also need to be managed in a sustainable manner.

Along a city street, trees provide shade and cooling, help in cleaning the air of dust and small particles, serve as barriers to help keep water in the soil and not running over the surface, reduce the impact of noise and generally add to the overall attractiveness of the community. Urban forests need to be managed and protected – they often become damaged by pollution, road salt and vandalism.

Trees in a schoolyard serve the same purposes, and more. They provide shade for outdoor activities for students; they provide nesting and perching sites for birds. They are the day to day interface between students and their natural environment, lending their beauty to the yard and naturalizing the school setting for students and staff alike.

We cannot underestimate the importance of trees in urban communities, including your own schoolyard. Imagine if your schoolyard had more trees, more shade and a greater amount of green space. Imagine if you could “green” the schoolyard! What can be done to make a schoolyard more environmentally friendly and support or enhance the sustainability of the local ecosystem? This lesson will help you and your students explore those possibilities.

NOTE: Depending upon the location of your school, you might consider taking your students to a park or other forested area.
**Procedure:**

**Step 1:**

Begin a class discussion about the importance of forests and forest communities and what trees and forests provide:

- Photosynthesis
- Wildlife habitat
- Travel corridors
- Shade
- Decoration
- Soil stability, etc.

Ask your students if they think there are many trees in their community. Then, have them consider their immediate schoolyard. What are the trees used for in the schoolyard (shade, roosting branches for birds, beauty, place to hang ornaments, etc.)? Do they think the school could benefit from more trees? Where do they think more trees and shrubs could be added without compromising play areas or safety?

**Step 2:**

Explain to your students that they will be working together in teams to carry out a survey of their schoolyard. They will gather information about each of the trees they find in the schoolyard: the number, size, species, location and value to the school that each of the trees provides. In order to conduct the survey, they will first need to create a sketch map of the school grounds. They will then consider how they can enhance the environmental value of their schoolyard.

NOTE: Talk to your local municipal offices and determine whether you can access aerial photographs of your schoolyard before the school was built to compare the forest cover.

**Step 3:**

Divide your class into Schoolyard Survey Teams. Each team should be made up of approximately four students. Their first task
is to create a team name and logo! Then have each group prepare a Tree Survey Form similar to the outline below.

**Step 4:**

Head outside! Each Schoolyard Survey Team will first begin by mapping the school grounds. Have each team walk around the schoolyard and create an outline map of the area. Each time they include a tree on their map, they can approach the tree, measure it, and input their data for that tree onto their survey form.

<table>
<thead>
<tr>
<th>Tree Number</th>
<th>Tree Species</th>
<th>Diameter</th>
<th>Human Impacts</th>
<th>Value to the School</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sugar maple</td>
<td>25 cm</td>
<td>soil compaction by students</td>
<td>provides shade, roost for winter birds</td>
</tr>
<tr>
<td>2</td>
<td>White pine</td>
<td>42 cm</td>
<td>decorations hung here during holidays</td>
<td>provides shelter for birds, nesting site, shade</td>
</tr>
<tr>
<td>3</td>
<td>Red oak</td>
<td>15 cm</td>
<td>mulch around roots</td>
<td>provides beauty, fall colours</td>
</tr>
<tr>
<td>Etc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Step 5:**

Return to the classroom. Have each team review the data they collected in their tree survey. Ask them to answer the following questions:

- What are the common human impacts to the trees in the schoolyard?
- What are the common values that the trees provide?
- In looking at your map, are there places in the school grounds where trees could be added to provide additional value?
- Can you suggest ways to reduce negative human impacts on the existing trees?

**Step 6:**

Have each Schoolyard Survey Team prepare a formal copy of their map, entitled “(The name of the Team)’s Environmental Landscape Design Plan.” Have students clearly indicate where they propose to add new trees, shrubs or other plants.
Step 7:

Have each Schoolyard Survey Team present their completed Environmental Landscape Design for Urban Forest Sustainability to the class.

Extensions

- Have the class vote on their favourite plan. Continue to refine the plan, seeking input from everyone in the class. You can proceed as far as you want:
  - Do a presentation to the principal/student council
  - Do a presentation to the Parent Council
  - Do a presentation to the School Board
  - Contact Evergreen, Tree Canada or other organizations that provide information about greening schoolyards (see page 10)
  - See Cathy Dueck’s article entitled “Creating a Schoolyard Tree Nursery” in Green Teacher magazine #47 for ideas on how to start your own school tree nursery