

# SHADE TREE SURVEY

## – TEACHER'S GUIDE



### ACTIVITY

Using the **Shade Tree Survey**, students will identify, measure and investigate shade trees. Use this activity to guide your shade tree studies, practise identification skills, and provide entry into more focused tree-related topics.

### PURPOSE

- inspire inquiry and increase awareness of shade trees in the urban forest
- help students get to know neighbourhood shade trees through hands-on experiences
- introduce concepts of seasonal and long-term monitoring of urban trees
- foster students' desire to care about, and care for, shade trees

### BACKGROUND

Shade trees are an important part of Surrey's urban forest. They grow in the open (as opposed to in a forest) along streets, on school grounds, and in parks. Shade trees are everywhere; they are accessible examples of nature right outside our windows. Information gained from mapping and monitoring city trees helps communities better care for them; this includes watching for signs of distress, managing pests, watering young trees, assessing risks, and replacing dead or dying trees. In a city, shade trees generally include a combination of native, hybrid and introduced species, which together contribute to a larger network connecting natural areas.

Refer to the **Shade Tree Journal** for a primary-level introduction to shade trees.

### SUGGESTED MATERIALS

- **Shade Tree Survey (required)**
- clipboards
- pencils
- labels
- field guides
- measuring tapes
- **Shade Tree ID**
- *Optional:* tensiometer, mason jar, pH strips, UV beads

## STEPS

1. Choose a study site—this could be along a sidewalk, in a nearby park, or on your school grounds. A good study site should include at least five trees and, if possible, diverse tree species. Assign each tree a number and create a simple map for reference.
2. Print a **Shade Tree Survey** for each student, and review each section with your class before heading outside. Refer to the additional notes and instructions for each section below.
3. Have students work in groups, and assign each group a tree. Multiple visits to the same study site may be required to complete each section of the **Shade Tree Survey**. Have students take turns leading on each section.
4. Share and compile. Completing the **Shade Tree Survey** is just one step in mapping and monitoring shade trees. Go one step further—use your collected information to create a map and database of your neighbourhood trees. This will be a valuable resource to refer back to for long-term monitoring.

## SECTIONS

### Location

- Most trees on City property are inventoried on the City of Surrey's Mapping Online System (COSMOS). Shade trees on school grounds or private property are not included in the City's inventory.

### Who's Who?: Tree Identification

- How many times have you walked by a shade tree and actually paid attention to it? At first glance, it's hard to tell them apart. This section guides students to ask the right questions and focus on details when identifying plants.
- Identifying trees can be difficult, even for experienced professionals. Allow students to make observations and then attempt identification. Students can reference **Shade Tree ID**, local field guides, dichotomous keys, or COSMOS; or use the Seek App by iNaturalist to help with identification.

### Home Sweet Home: Shade Trees and Wildlife

- Shade trees are examples of micro-habitats in urban areas. They support urban-adapted wildlife and provide important connections between fragmented natural areas.

### Back to 'Base-ics': Tree Wells

- Tree wells are particularly important for young trees. Grasses, weeds and other plants growing around a tree's base compete with tree roots for the same water and nutrients. Creating a tree well by removing vegetation and adding mulch reduces this competition and helps the soil retain moisture.
- Extensions:
  - Conduct soil science investigations. Use a tensiometer to measure soil moisture content or pH. Collect a small soil sample to view with a magnifying glass.
  - Investigate how much ultraviolet light is reaching the tree's base. Use UV beads to experiment with different locations, cloud coverage and seasons.

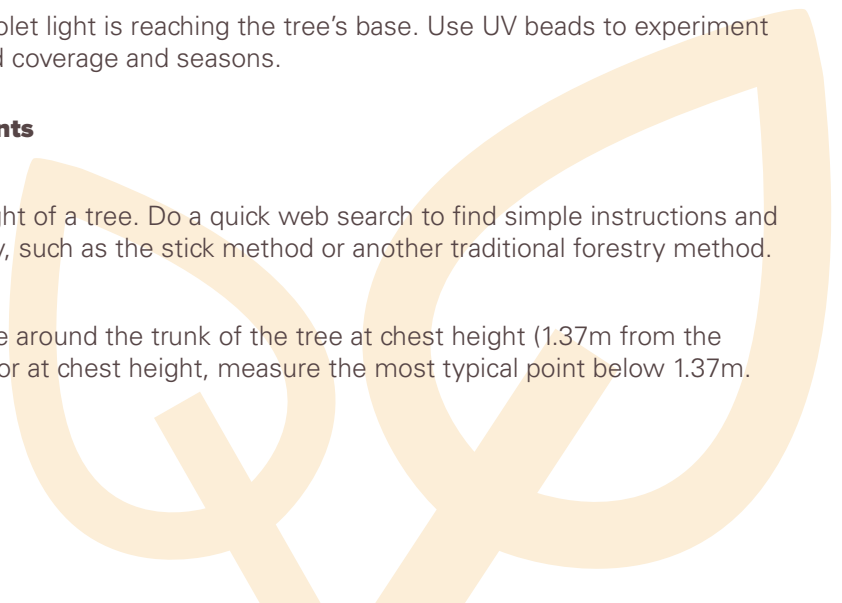
### How Does it Measure Up?: Tree Measurements

#### Height

- There are many ways to measure the height of a tree. Do a quick web search to find simple instructions and videos. Choose one or two methods to try, such as the stick method or another traditional forestry method.

#### Circumference & Diameter

- Using a measuring tape or string, measure around the trunk of the tree at chest height (1.37m from the ground). If the tree forks or bulges below or at chest height, measure the most typical point below 1.37m.



### Think Like an Arborist: Tree Assessment

- Arborists specialize in caring for trees. They are knowledgeable, trained and equipped to provide ongoing tree care including tree assessments and pruning.
- Submit a Surrey Parks service request if you have any concerns (e.g., vandalism, potential hazards) while surveying City shade trees.

### Tree-mendous!: Benefits of Shade Trees

- Refer to page 15 of Surrey's *Shade Tree Management Plan* for a list of environmental, economic and social benefits of shade trees.

### Speak for the Trees: Tree Care

- There are many ways for students to take action and care for urban trees. The more we know about our local trees, the better we can recognize their value and how to best care for them. Ultimately, we hope students will develop a life-long appreciation for trees and inspire others to do as well.

### EXTENSIONS

- Extend the learning with the guiding questions in **Dig Deeper: Neighbourhood Trees** and **Dig Deeper: Urban Trees Please**.
- Create tree scavenger hunts with your own clues, developed from information you gather about nearby trees.
- Create a neighbourhood tree tour. Have students introduce their trees to other classes.
- Research careers in urban forestry (e.g., climbing arborists, forestry technicians, ecologists, urban foresters, tree planters, park interpreters, planners, outreach educators).
- Investigate connections between climate change, urban greening and threats to urban trees.
- Have students conduct a shade tree survey on a tree near their home.

### ADDITIONAL RESOURCES

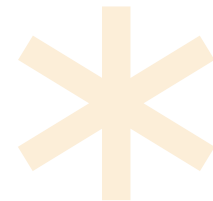
City of Surrey ***Shade Tree Management Plan***

City of Surrey's Mapping Online System (COSMOS) [cosmos.surrey.ca](https://cosmos.surrey.ca)

*Urban Forests in Your Neighbourhood*, lesson plan in UBC Coolkit

Seek App by iNaturalist [inaturalist.org/seek](https://inaturalist.org/seek)

*Tree of All Trades*, video by Halifax Regional Municipality



**Surrey Parks works together with the community to celebrate nature and protect the environment.**

Visit us online to plan your park visits, connect with nearby nature and help your students become stewards of our urban forest.