



## Quarrybrook

EXPERIENTIAL EDUCATION CENTER

### Program Title: **Tracking the Trees**

**Audience:** 5th grade students

**Program Theme:** Environmental factors such as topography, soil type, and water availability determine which tree species will thrive in an area.

**Program Goals:** During a fall or spring visit, students will journey to three different microhabitat study sites, each with varying topography, soil and tree profiles, and water availability. Students will compile forest ecology data sets at each site. We will compare and contrast the physical characteristics and dominant tree species of each site, and draw conclusions about which species grow best in what conditions and why.

**Next Generation Standard:** 5-LS1-1 Support an argument that plants get the materials they need for growth chiefly from air and water.

#### **Objectives:**

- **What are the objectives?** Students will become familiar with seven tree species and their growing conditions. Students will understand the difference between native and non-native organisms. Students will compare all aspects of the three study sites, and begin to recognize forest succession patterns.
- **How will they be measured?** Students will complete all data sections of their field journals. Students will be able to summarize their findings, making connections between available resources and the presence or absence of tree species.

#### **Program Outline:**

Activity 1: TREE PROFILE HIKE (90+ min.) – The entire lesson will be comprised of this field research.

Groups will spend close to two hours on the trail, working to compile forest ecology data sets from three distinct microhabitats. As we move through our field study, students will be asked to make observations of the topography around us and describe the changes they are seeing as we move downslope from a rocky hilltop, to muddy flats, to an area that has been flooded by beaver activity. Students will use a tree identification flip chart to help them name the trees by observing leaf shape and the bark. Data sheets in their field journals will include pages for them to identify the most abundant tree species, conduct sample species counts, take bark rubbings, describe soil profiles, and record topography comparisons.



For this hike, we will split students into sub-teams, with each adult guiding a team through the multiple steps of the site investigations and data recordings. Teachers are encouraged to make any connections back to class and suggest any additional data collection, observations, or questions that would be relevant for later classroom study.

**Conclusion/Wrap-up:** We will gather the students back together at the end of our journey, and conduct a review of everyone's data sets. We will discuss the observations we have made so far as a group and begin to make connections between site characteristics and tree growth. Part of the final discussion will explore some of the effects of long-term flooding, such as changes in the plant and animal species profiles over time.