

Birch Basics Resource Sheet

Age/Grade Range

- Ages: 8-18+

Group Size

- No minimum/maximum
- Can be done individually or in small group

Introduction

Paper Birch (*Betula papyrifera* spp.) is arguably the most important tree in the boreal forest. It is a prolific, resilient tree whose range extends from the Pacific to the Atlantic to the near-Arctic tree line. Whereas Sugar Maples (*Acer saccharum*) grow only in eastern regions, Canadians from coast to coast almost co-habitat with Paper Birch trees.

Humans have countless uses for birch, from fuelwood to furniture to food. Indeed, birch sap harvesting is a traditional Aboriginal technology practiced by many First Nations, including those in the Northwest Territories. As a seasonal activity, birch sap harvesting represents one of Dene Kede's essential cultural experiences since it grounds concepts, skills and attitudes of a classroom in a practical, traditionally-relevant, outdoor activity.

Critical facts about birch trees and sap production:

- Sap flow is in the spring of the year when day time temperatures are consistently above freezing, and the ground begins to thaw. While there is still much debate about the mechanisms of sap transport, it is a sure bet that sugars photosynthesized during the previous summer and fall, are stored in the tree's roots in watery sap up the trunk and towards the crown when conditions become warm. The sugars help to fuel the growth of the new season's leaves.
- There are a variety of birch species in Canada. In Western Canada, indigenous birch trees (as opposed to indigenous shrubs- Dwarf Birch, Bog Birch) are known as Paper Birch, White Birch, Canoe Birch, or Alaska Birch. There is some debate whether Alaska Birch is a subspecies of Paper Birch or a species in its own right. For our purposes, all trees can be harvested for sap.
- Birch sap contains, on average, 1% sugar. The sugars are principally fructose and glucose, as opposed to maples' high concentration sucrose. Fructose tends to burn at lower temperatures than sucrose, meaning that care must be taken not to scorch birch sap during



NWT SCIENCE FOCUS

Topic

- Local Food Production

Objective

- Learn the basics of birch sap production



evaporation. Moreover, fructose has a lower tendency to crystallize, resulting in a thinner syrup than maple.

- Birch is reportedly more acidic than Maple sap. For this reason, it is recommended avoiding metal equipment, wherever possible in the harvesting and production of birch syrup, to avoid imparting metallic flavours.
- Invariably, questions arise about whether sap harvesting harms the tree. Seemingly, exposure to infection poses a higher risk to health than sap taking. For this reason, care must be taken when taping and plugging holes. Only sterilized drill bits, spigots and plugs should be used.
- Humans aren't the only species to tap birch trees in the spring. Yellow-billed sapsuckers can often be seen boring holes in birch trunks and eating the insects that are attracted to the sweet dripping liquid. Look for sap-sucker perforations on birch trunks in the southerly regions of the NWT and keep your eyes peeled for the boreal bird during the spring run.

Additional Information

Web Resources

- [Birch: White Gold in the Boreal Forest](#) - this PDF is an invaluable resource for first-time birch harvesters. While the information relates specifically to Alaska, the document contains recipes, best practice guidelines and suggestions for further reading.
- [Birchboy.com](#) - A comprehensive site, providing information on birch syrup production, history, commercial standards and recipes. Also, a retail source for birch syrup products

Books

- K'i tu/Birch Water, Brent Kaulback & students of chief sunrise Education Centre. South Slave District Education Authority.
- Backyard Sugarin', Rink Mann. Woodstock Vermont: Countryman Press. 1976

Pairs Well With

- Distilling Birch Syrup
- Tapping Birch Trees

