

Forestry

Forests provide us with clean air and numerous wildlife habitats and help to prevent soil erosion and improve water quality. They also provide us with over 5,000 products we use in our daily lives. By studying this module, you will understand the steps taken to achieve this balance and manage one of Canada's most renewable resources.

Knowledge Base

Some of the things you will be able to do by mastering the forestry section include:

- Identify the major forest regions of Canada;
- Identify the principle tree species of each of Ontario's forest regions;
- Examine the historical importance of Ontario's forests, including their many values to people and to the natural environment (horticulture, forestry, and gardening);
- Identify how much of Canada and Ontario's surface land area is forests, including how much of the forested land is crown and how much is privately owned;
- Identify the kinds and number of jobs in Ontario and Canada which are forest-related (grade 10 academic science, grade 9 applied/academic geography);
- Describe the economic importance of forest-related industries to provincial, national and international economies (grade 9 geography, grade 12 organic chemistry);
- Describe the main components in the operation of a sawmill, including processes, jobs and equipment;
- Explain the industrial paper making process, including processes jobs, and equipment
- Identify the major types of forest products that are produced in Ontario (grade 9 applied/academic geography, grade 12 organic chemistry);
- Understand terminology required to utilise a tree identification key;
- Describe the process of photosynthesis and cellular respiration as they result to the cycling of energy, carbon, and oxygen through abiotic and biotic components of an ecosystem (grade 10 science);
- Explain tree growth from photosynthesis to branch growth to trunk growth (grade 12 organic chemistry);
- Explain how environmental concerns such as water quality, habitat, recreation and aesthetics are incorporated into forest management (grade 9 geography, grade 12 organic chemistry);
- Explain the concepts of even and uneven aged forests;
- Describe the various cutting styles and silvicultural principles that are appropriate for various sites;
- Describe causes of wildfire and fire prevention methods;
- Explain the role wildfire plays in forest destruction and regeneration;
- Identify 4 main categories of harmful insects and how they affect trees and forests (defoliators, sucking insects, gall makers, borers) (grade 10 academic science);
- Describe the main insects and diseases that affect Ontario's forests;
- Illustrate the process of succession (grade 11 living things).

Hands on Applications

After you master the knowledge base, some of your skills will include:

- Identify a tree species using leaf type, branching, bark, bud scales, site type, key);
- Use the following forestry equipment: Tree calipers (dbh), Compass, Prism, Caliper tape, Increment borer, Clinometer;
- Determine the age of a tree using an increment borer or tree cookie;
- Explain the forest management cycle and each of its component parts: planning, harvesting, site preparation, regeneration, tending and protection (grade 9 geography, grade 12 biology);
- Consider the impact of certification on sustainable forest management.;
- Identify harmful forest insects and evidence of their presence in a forest;
- Analyze issues related to environmental sustainability and the impact of technology on the forest ecosystem (grade 10 academic science);
- Illustrate the classification of plants by identifying similar and different characteristics (grade 11 biology).