Lesson Summary
Learn about the different forest regions in Canada.

A Forest Ecosystem Education Guide
Activities and Lesson Plans For Teachers and Resource Educators

www.focusonforests.ca
Activity Information

Estimated Duration: 1 to 1.5 hours

Materials: Canadian atlas showing growing season, precipitation and soil regions; tree identification books, plastic bags, tags or masking tape, and a spoon

Setting: Indoors

Key Vocabulary: forest region, soil condition, sand, silt, clay, peat
It seems hard to believe that 10 000 years ago most of Canada was covered with ice. As the ice receded, the land that emerged was quickly colonized by plants and trees. The exceptional ability of trees to migrate and to adapt to new soils and climatic conditions accounts for the transformation of the land.

Today, there are eight recognized forest regions in Canada: the Boreal, Deciduous, Great-Lakes-St. Lawrence, Acadian, Subalpine, Montane, Columbia, and Coast forest regions. Each region has its own characteristic mix of tree species that thrive under certain growing conditions. The distribution and growth of tree species is heavily influenced by such factors as topography, climate, and soil conditions.

Soil condition, including composition, type, depth and moisture regime, is an important factor that influences the occurrence of tree species in a certain region. Different trees require different soil conditions. Jack pine, for example, usually grow well in dry, sandy soils, whereas tamarack prefer moist to wet, peaty soils. Forest managers need to know this information in order to choose species that will grow successfully on areas that have been harvested.

1. Begin your discussion by asking students about their travels through Canada. Ask them to recall any distinguishing characteristics of the lands and forests they traveled through. Have them suggest why the forests vary so much. You could mention that the first eastern Canadian loggers to work in British Columbia had no idea that the coastal trees would be any different. To their complete surprise, they found that their small saws were totally inadequate for felling the massive Douglas fir trees of the west coast.

2. The activities in this lesson are intended to help students recognize the vast extent of forests in Canada and the variability of these forests. Emphasize the connection between the topography, climate, soils, and type of vegetation growing in particular regions.
Activity 1

1. Distribute the Map of Canada and have students transfer the following information from an atlas onto the map:
   - soil regions
   - the mean annual length of growing season
   - the mean annual precipitation

2. Using the information on the sheet and a tree identification book that describes the habitat or growing conditions of each species (including soil type, required annual length of growing season, and annual precipitation), have students plot the tree species on the map in appropriate locations, according to soil, growing season, and precipitation. They can use different symbols for each species, then draw boundaries around them to help locate the forest regions. Use coloured pencils or varied hatch marks to distinguish one forest region from another.

3. Have students analyze the maps and draw conclusions about which factors determine the location of Canada’s forest regions.

Activity 2

Take a walk around the school grounds and have students scoop up and bag a bit of soil from around the base of several different trees growing on the school grounds. Label the bags with the name of the tree species growing on the site. Challenge students to create their own lab studies to examine the various properties of the soil samples (e.g. particle size, type, texture, water holding capacity, nutrient content). Draw conclusions about the properties of the soil required by the tree species growing there and check conclusions against the species site requirements or habitat in a tree identification guide.

Extensions

1. Have students investigate the glacial migration of vegetation. How did trees migrate and how were they able to adapt to new soils and climate?

2. Have students write profiles of each of the eight forest regions emphasizing the kinds of wildlife and the economic significance of the forests in that region.

Evaluation

Have the students predict the change in the location of the forest regions if there were a 2°C increase in temperature due to a general planetary warming. What about a 10°C decrease? Discuss the changes that might occur in soil moisture. Students could illustrate the changes on a map or write a description of the new forest regions of Canada.
The Eight Forest Regions of Canada and Their Principal Tree Species


<table>
<thead>
<tr>
<th>Region</th>
<th>Species</th>
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</thead>
<tbody>
<tr>
<td>Boreal</td>
<td>White and black spruce, balsam fir, jack pine, tamarack, white birch, aspen</td>
</tr>
<tr>
<td>Great Lakes- St. Lawrence</td>
<td>Eastern white pine, red pine, eastern hemlock, yellow birch, sugar and red maple, beech</td>
</tr>
<tr>
<td>Deciduous</td>
<td>Sugar maple, beech, white elm, tulip-tree, black walnut, hickories</td>
</tr>
<tr>
<td>Acadian</td>
<td>Red spruce, balsam fir, yellow birch, sugar maple, beech, white pine</td>
</tr>
<tr>
<td>Coast</td>
<td>Douglas and amabilis fir, western hemlock, sitka spruce</td>
</tr>
<tr>
<td>Columbia</td>
<td>Western red cedar, western hemlock, western white pine, western larch, interior Douglas fir, Engelmann spruce</td>
</tr>
<tr>
<td>Montane</td>
<td>Ponderosa and lodgepole pine, interior Douglas fir, trembling aspen, Engelmann spruce</td>
</tr>
<tr>
<td>Subalpine</td>
<td>Engelmann spruce, alpine fir and lodgepole pine</td>
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