



Science Unit: *Temperate Forest*

Lesson 7: *Comparing Deciduous and Evergreen Trees*

School year: 2004/2005

Developed for: Lord Selkirk Annex Elementary School, Vancouver School District

Developed by: Catriona Gordon (scientist), Gwynne Thompson and Donna Milligan (teachers)

Grade level: Presented to grades 1 - 2; appropriate for grades 1 – 4 with age appropriate modifications.

Duration of lesson: 1.25 hours

Notes: *This lesson is based on B.C. Ministry of Forests. Forests in Focus, p. 8-14. "Comparing Trees". The lesson can take place outdoors in schoolyard or in a park.

Objectives

1. Learn about differences between deciduous and evergreen, broad-leaved and needle-leaved trees.
2. Students will also learn to identify several tree species.

Background Information

Trees can be broadly divided into two categories: deciduous and evergreen. In temperate forests, deciduous trees shed their leaves each autumn to minimize water loss when temperatures are too low for photosynthesis. Deciduous trees require large quantities of nutrients to form new leaves each spring. Evergreen trees retain their leaves for 2-4 years, losing a few leaves at a time. These trees require fewer nutrients and can grow on very poor soils. Most deciduous trees in B.C. are broad-leaved, while most evergreen trees are needle-leaved (conifers).

Vocabulary

Deciduous: Plants whose leaves fall at the end of the growing season.

Evergreen: Plants with green leaves or needles, which are retained throughout the year.

Broad-leaf: Plants with leaves, which are wide and flat with a network of veins (typically deciduous).

Needle-leaf: Plants which have narrow, small, needle-like leaves.

Conifer: Trees that bear naked seeds inside cones.

Dormancy: Period of growth inactivity in plants.

Species: Basic unit of classification: population of individuals capable of interbreeding freely.

Materials

- Magnifying glasses
- Wide crayons for bark rubbings
- Examples of cones, acorns, tree seeds, bark
- Cardboard to write on
- Masking tape for bark rubbings
- Examples of broad leaves and needle leaves
- Pencils
- Activity sheet



In the Classroom

Introductory Discussion

Forests are made up of many different tree species. Trees can be divided into two main categories: deciduous and evergreen, and broad-leaved and needle-leaved.

- Discuss differences
- Look out the window to see leaf drop during fall months, leaves changing colours. Why do leaves change colour? Why do leaves fall?
- What do the trees do in the winter? Why do some trees stay green in the winter?

Science Activity/Experiment

1. Students go outdoors to do a detailed comparison between one evergreen and one deciduous tree. Comparisons can be made between leaves/needles, cones/seeds/acorns, bark, tree outline or shape. Students can draw and label and make notes as to differences and similarities.
2. Leaf and bark rubbings may be done, weather permitting (leaves and bark must be dry). One leaf is placed upside-down on cardboard with paper on top. Crayon is gently rubbed over area of leaf until leaf imprint is apparent. Bark rubbings may be done by taping paper to trunk and gently rubbing crayon over the paper until bark imprint appears. If too wet, then detailed drawings can be done back in the classroom using collected leaves and reference books.

Closure Discussion

Review differences between evergreen, deciduous, broad-leaved and needle-leaved trees.

References

3. B.C. Ministry of Forests. 1999. Forests in Focus. ISBN 0-7726-3966-3 p. 8-14.
4. Brough, Sherman G. 1998. Wild Trees of British Columbia, Pacific Educational Press.
5. Burnie, David. 2000. Tree, Pages 26-33, 44-47. Dorling Kindersley Eyewitness Books.
6. Ganeri, Anita. 1992. Focus on Trees, Pages 4-9. Gloucester Press. London.
7. Ganeri, Anita. 1993. What's Inside Plants? Pages 28-29. Peter Bedrick Books.

Comparing Trees

Name: _____

A Tree with broad leaves		A Tree with needles
	Tree shape	
	Leaves or Needles	
	Cone /Seed	
	Bark (rubbing)	

Species: _____

Species: _____