



Science Unit: *Soils, Plants, and First Nations*

Lesson 6: *Richmond Nature Park Fieldtrip*

School year: 2007/2008
Developed for: Britannia Elementary School, Vancouver School District
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Grade level: Presented to grades 1, 2 and 3; appropriate for Grades 1 to 5.
Duration of lesson: All day
Notes: Note: Part of this lesson was conducted by Richmond Nature Park interpreters, who conduct school programs including First Nations bog plants and their uses.

Objectives

1. Explore, first hand the large diversity of native bog plants used by First Nations Coastal peoples.
2. Discover the many uses of First Nations plants including edible plants and those used in aboriginal technology.
3. Learn about common invertebrates found in Richmond Nature Park.

Background Information

Richmond Nature Park is located on Lulu Island and represents the largest remnant of Greater Lulu Island Bog. This bog was a very important site for coastal First Nations people, particularly the Musqueam people, who historically collected essential food crops such as cranberries and blueberries during the summer and early fall and preserved them for use over the winter. Labrador tea, an evergreen bog plant, was also collected by First Nations and used to make a beverage and for medicinal use. Sphagnum moss, characteristic of bogs was used for baby diapers, bedding, wound dressings and for cleaning fish before smoking them.

A bog is an acidic wetland, characterized by a bed of spongy, wet sphagnum moss. When the moss dies it adds new layers of peat. The peat layer in some instances can be up to 6 meters deep. Bogs have poor drainage and very limited nutrients. They receive moisture from rain and/or snow but do not have other sources of water. Some bog plants, such as the rare sundew, obtain additional nutrients by capturing insects on sticky leaf hairs. Many bog plants found in Richmond Nature Park are remnants of the Ice Age, when arctic conditions existed here in the Lower Mainland. These plants are now common in the vast northern region of Canada.

Vocabulary

Bog: A naturally waterlogged area having a spongy, acidic bed composed mainly of sphagnum moss and peat in which characteristic shrubs, herbs and trees grow. Bogs are typical in Arctic regions.

Marsh: An area of soft, wet, low-lying land, characterized by grassy vegetation and often forming a transition zone between water and land.

Wetland: A low-lying area of land that is saturated with water. Marshes, swamps, and bogs are examples of wetlands.

Acid: A class of compounds, corrosive and sour when dissolved in water, that combines with



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- ; a base to from a salt. Eg. vinegar
- Sphagnum moss: A common moss commonly found in temperate bogs and whose decomposed remains form peat. Its tiny leaves can hold up to 30 times their mass in water.
- Peat: Decomposed plant matter, usually mosses, found in bogs which can be used as fertilizer and fuel
- Invertebrate: An animal which lacks a backbone or spinal column. Eg. Insect, mollusk

Materials

- Magnified bug jars*
- Bug cloths (old sheets can be ripped up and used)*
- Identification guides*
- Magnifying glasses
- Pencils
- Small Ziploc bags with strings attached to go around childrens' necks so they have their hands free.
- Invertebrate identification sheet with commonly found invertebrates

* these items were kindly supplied by the Richmond Nature Park staff

Facilities at Richmond Nature Park

Richmond Nature Park is located at 11851 Westminster Highway, just east of Shell Road. (Tel. 604 718-6188). It has a rich child-friendly interpretive Nature House, washrooms, a small playground, a covered area with picnic tables, a bird feeding station, an artificial pond, boardwalks and wood-chip trails.

Two classes attended this all-day field trip. A half-day was spent in the Richmond Nature Park school program on First Nations bog plants and the other half-day was spent identifying plants and looking for invertebrates.

Elementary School programs can be booked by calling 604 718-6188.

See http://www.richmond.ca/shared/assets/Nature_Park_School_Program_Brochure14828.pdf

Introductory Discussion

1. Who knows what a bog is? Stand on the wood chip trails and do a "bog jump". Can you feel how spongy it is, like a little trampoline? Special plants and animals live in a bog. Look around. Can anyone name a plant or animal that lives here?
2. Where did First Nations people go to get food or a snack? Many years ago there were no MacDonalds, or supermarkets. Brainstorm about what plants were used by First Nations people. Talk about the lack of refrigeration. How did First Nations preserve the food that was collected in the spring and summer? How did they cook their food?
3. Where do your clothes come from? What plants do we use today for clothing? (Cotton, wool, synthetic material) What did First Nations people use for clothing, or to collect food in the forest? How were clothes/baskets made? What material did they use to weave?

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1. For the invertebrate hunt: Who knows what animals might live in a bog? What small animals live in a bog? Can you see anything on the ground or flying about? We are going on an invertebrate hunt. Who knows what an invertebrate is? Everyone feel the bumpy part of your back. Can you feel your backbone? Many animals have no backbone. These are called invertebrates.



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Science Activity/Experiment

1. Divide students in to pairs. Each pair should have a bug cloth and a magnified bug jar. Show students how to place the bug cloth on the ground under a bush. Give the bush a firm shake and inspect the cloth for bugs. Any bugs can be placed in the bug jars for closer inspection. Have a bug identification guide handy to help with identification. If there are no bugs, go to another bush. Ask students to find at least 4 different invertebrates and share their findings with other students.
2. Take students to a forest clearing in the park and inspect the leaf litter for invertebrates. Lift up branches or fallen logs to see woodbugs, slugs, snails, centipedes, millipedes etc.
3. Think if you were an invertebrate. What would you eat? Who would be your predator? What kind of home would you live in?
4. If time permits, get students to draw and label their invertebrates on an activity sheet and add one distinguishing feature for each invertebrate.
5. Conduct a nature scavenger hunt, while walking through the forest. Remind students not to collect the items, but to look, feel, smell, and then tick off the items on their list.

Closure Discussion

Try to imagine living off the land thousands of years ago, like First Nations peoples, with just plants and animals around you to catch, gather and eat. What would be easy/hard?

References

<http://www.richmond.ca/parksrec/ptc/naturepark/about.htm> Richmond Nature Park General Information

http://www.richmond.ca/_shared/assets/Nature_Park_School_Program_Brochure14828.pdf (Richmond Nature Park: School Program Brochure)

www.ainc-inac.gc.ca/ks/pdf/food.pdf First Nations government website

Turner, Nancy J. 1995. Food Plants of Coastal First Peoples. Royal British Columbia Museum Handbook, UBC Press, Vancouver.

Pojar, Jim and Andy MacKinnon. 1994. Plants of Coastal British Columbia including Washington, Oregon and Alaska. Lone Pine Publishing. Vancouver.

Acorn, John and Ian Sheldon. 2001. Bugs of British Columbia. Lone Pine Field Guide. Lone Pine Publishing. Vancouver.

Richmond Nature Park Fieldtrip Scavenger Hunt

Tell your students that items below are just to **touch, smell, feel** and to **see**, but **NOT to collect**:

Find and tick off the following:

- 3 different types of seeds
- a green leaf
- a yellow leaf
- yellow pollen
- a flower
- a cone
- a feather
- something round: _____
- something fuzzy: _____
- something white: _____
- a place where a woodpecker has made a hole in a tree
- a spider's web
- a plant that is as tall as your shoe
- some sticky sap coming out of a tree
- a rotting log with a plant growing out of it
- a mushroom
- something that smells old: _____
- an insect living in wood