



## **LESSON PLAN: Find Your Soil (using soil maps)**

### ***Introduction:***

Soil maps for British Columbia are available both in print and online, and can help to inform land-use decisions. This lesson challenges students to first learn how to use an online map system, and to then make conclusions about land-use suitability based on that map.

*Prescribed learning outcomes* (PLO) are content standards for the provincial education system; they are the prescribed curriculum. The "Find Your Soil" lesson plan will help students to achieve the following BC PLOs<sup>1</sup>:

- Earth Science 11 – Surface Processes and the Hydrosphere (F3)
- Geology 12 - Surface Processes and the Hydrosphere (F1, F2)
- Sustainable Resources 11 – Agriculture (A1, A3, A6); Forestry (C1, C3, C6)
- Sustainable Resources 12 – Agriculture (D4); Forestry (A3, B3, B4, C5, E4)
- Science & Technology 11 – Natural Resources and the Environment (E4)
- Geography 12 – Biomes (E2-E4); Resources and Environmental Sustainability (F2)

### ***Learning Objectives:***

- Be aware that there are many different types of soils in a given community, and that the different soils have their own names
- Recognize that soil maps can be used to make land management decisions

### ***Materials:***

- Soils maps → in British Columbia, the main mapping books in print come in 3 Volumes: Soils of the Langley-Vancouver Map Area Volumes 1, 2, and 3. Volume 1 contains maps of the Langley-Vancouver area and Volume 3 provides a legend of information for the different soil series in Volume 1. Volume 2 contains maps and legend for the Southern Sunshine Coast and Southern Coast Mountains
- To access maps online, go to:  
<http://sis.agr.gc.ca/cansis/publications/surveys/bc/bc15/index.html>  
(Note: these documents take quite a bit of time to upload, so give ample time to access these online maps!)

### ***Activity Description:***

As a class, identify a certain landmark – the location of a popular local park (or ski hill) is a simple place to start (ie. Cypress Mountain) – on a photocopied map of your choice. Photocopy the map on to an overhead transparency so that the class can work together to find the school. Point out the surrounding landmarks that might help the students identify where the school is on the map. Once the school is found, bring up a transparency of a photocopied soil map for a similar area; point out the

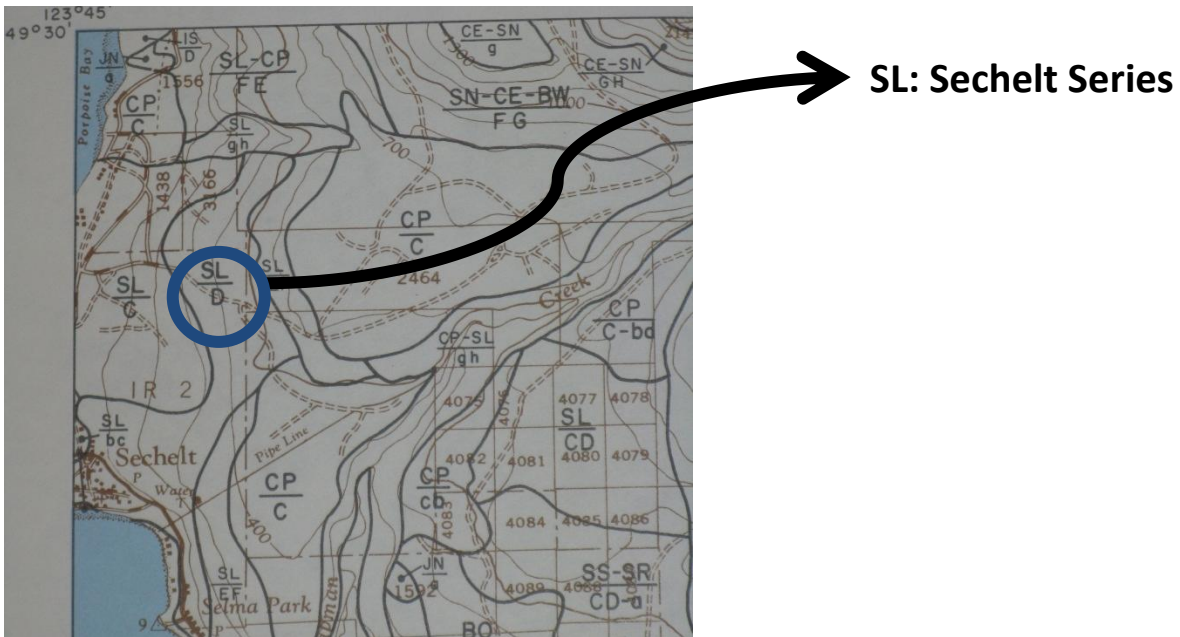
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<sup>1</sup> Please consult the appropriate Integrated Resource Package (IRP) to identify the PLOs. A catalogue of the BC Curriculum Documents (including IRPs) can be found here: <http://www.bced.gov.bc.ca/irp/all.php?lang=en#>



surrounding landmarks as before and find the school on the soil map. Match the two-lettered symbol on the soil map to the soil series names in the soil map Volume 3.

Once the soils series name has been identified, have students write the name on a blank page. Go through the notable climate, vegetation, and soil information for that soil series (in very basic terms), and get students to write those characteristics down. Then, go through another location, one with very different in soil characteristics. Once you have drawn that soil, talk about how Soil #2 and Soil #3 are different (this can also be done in small groups). Is one more gravelly? Does one have more trees of a certain type (evergreen vs. deciduous)? Is one darker (more organic matter and nutrients) or more salty? How might these characteristics impact a farmer trying to grow a crop there, or a construction company trying to build a road there? This part of the conversation will help to demonstrate that soils can be quite different from one another, and can affect the types of land use in the area. Inclusion of locally relevant land use examples will make this particularly powerful (i.e. the conflict between agricultural land use and residential development in the Okanagan Valley).



**Figure 2.** Above (left) is an image taken from a soil map for the Sechelt, BC area. The excerpt to the right is an example of the soil series legend information for map code SL: Sechelt Series.

The selected spots to locate on the soil maps can be whatever you choose, according to what is of interest to students and possible for students to identify. For example, individual house locations can be fun to do if students are able to find their houses on a map; the trick here is that no Canadian cities have their own online soil maps of the urban area, and so this is more easily done for rural communities. Any nearby farms or parks can also be interesting. You may then get the students to identify a given location (either assigned or of their own selection) on their own, and match the map information to the soil series name. The level of complexity in the interpretation of the maps can be adjusted according to the students' abilities.