SWAN LAKE CHRISTMAS HILL NATURE SANCTUARY

GRADE 2/3 FALL PROGRAM

1. **Acorns to Oaks**
2. **Seed Scavenger Hunt**
3. **Dirt is Different**

Welcome to Swan Lake! We hope this booklet will give you some background information to help you prepare your class for their visit and answer some of their Questions.

BEFORE YOU ARRIVE:

1. Let us know which **two program choices** you want. Choose two of the above three.

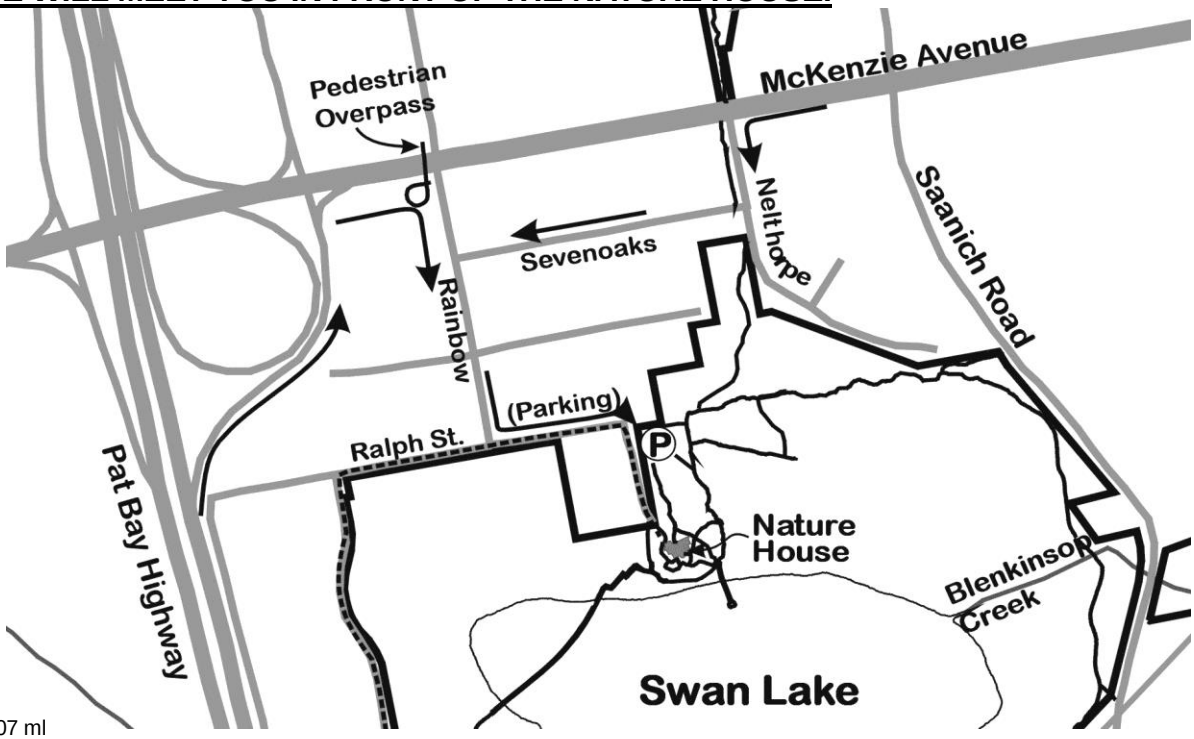
2. Divide your class into **TWO GROUPS**. Please have at least one other adult to go with one group, so that they can manage any problems that may arise.

3. Provide each student with an easily read, waterproof **name tag** for both indoor and outdoor activities.

4. Please encourage appropriate **clothing** for the weather. Remember that at least half of your program is outside.

Thank you for your cooperation.

WE WILL MEET YOU IN FRONT OF THE NATURE HOUSE.



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GRADE 2/3 FALL PROGRAM

1. **Acorns to Oaks**
2. **Seed Scavenger Hunt**
3. **Dirt is Different**

Teachers choose two of the above program choices. With the class divided into two groups, one group will do one activity and the other group the second one. They will then trade. Each choice takes approximately **40 to 45 minutes**. Sometimes the program will allow for students to have a few minutes **"free time"** exploring the Nature House.

We encourage students to return to the Nature Sanctuary with their families to tour the Nature House and enjoy the lakeside trails and the trails on Christmas Hill.

Our Basic Goals: Students will be able to:

Acorns:

- recognize acorns as a kind of **nut/seed**
- understand the **life cycle** of an acorn growing up to become a Garry Oak tree

Seeds:

- find a **diversity of seed types** described on a scavenger hunt list
- discuss how seeds travel

Dirt:

- examine and compare **different kinds** of dirt
- understand that **dirt is formed** in different ways.

Swan Lake nature programs strive to support Teachers in the classroom:

Big Ideas from the BC Curriculum:

- All living things have a life cycle (gr. 2)
- Living things are diverse, can be grouped, and interact in their ecosystems (gr.3)
- Wind, water, and ice change the shape of the land (gr.3)

Content from the BC Curriculum:

- Water sources, including local watersheds (gr.2)
- Biodiversity in the local environment (gr.3)

Curricular Competencies:

- Demonstrate curiosity and a sense of wonder about the world (gr.2)
- Experience and interpret the local environment (gr. 2)
- Compare observations with predications through discussion (gr. 2)
- Make observations about living and non-living things in the local environment (gr.3)

ACORNS TO OAKS

This program choice takes place mostly in our **Indoor Classroom**.

The students participate in a hands-on examination of different kinds of nuts including acorns. Nuts are **separated into groups**. Students are asked which are edible by humans, and which ones they like. Discussions follow about what is inside a nut and what other animals like to eat Garry Oak acorns.

Students then examine some acorns and describe interesting features. In this way they **"discover"** that some of the acorns will not survive and grow into Garry Oak trees. They may notice cracks, mould, dehydration and signs of animals eating them, particularly the **acorn weevil**. **Scientific data** is gathered from the students based on these observations, and recorded in a **scientific table**. Each student then gets to examine one of his/her acorns that is cracked open.

Students then participate in a drama depicting the **life cycle of the acorn** as it grows into a **Garry Oak tree**. The life cycle is then reinforced with a **felt board**.

Students will be introduced to our Garry Oak trees outside.

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SEED SCAVENGER HUNT

This program choice takes place **Outdoors**.

The Scavenger Hunt introduces the importance of **Conservation and Scientific Sampling**.
Students are encouraged to:

- **stay on the path** as much as possible
- watch where they step in the field, off the path
- only go off the trails with a leader from Swan Lake
- **tell family and friends** in future visits to stay on the paths
- **collect only 1** of each kind of seed
- **leave the seeds** in the field.

In the field, the students will be **paired** and given a **list**. The list will be **read out loud together**, with explanations given as necessary. **Field boundaries** are set, and **collection bags** are given out. When the students are finished, the group gathers around the leader and their collections discussed. Students can see a large **diversity of seed types**. **Seed dispersal** will also be discussed. Seeds can travel by flying, floating, rolling, and sticking onto animal fur or by riding in animal tummies. After this, students can **"plant"** their seeds on exposed soil in the field.

Seeds collected may include:

Douglas fir cone

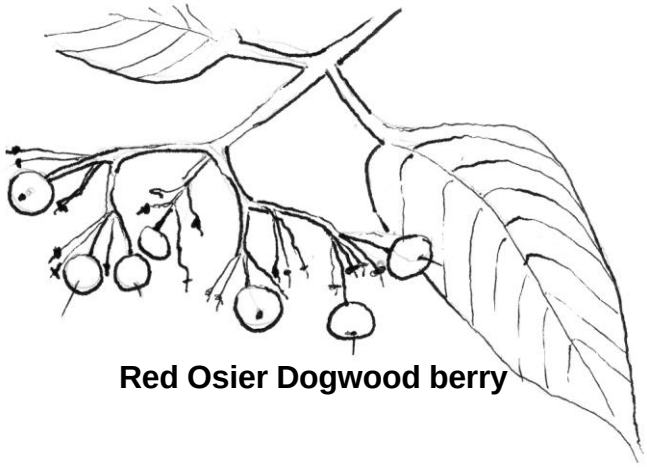
Cedar cone

Garry Oak acorn

Blackberry

Snowberry

Hawthorn berry



Red Osier Dogwood berry

Rose hip

Bedstraw (Hitch-hiker)

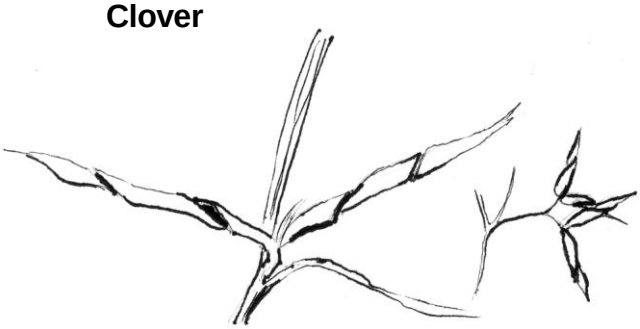
Dandelion

Douglas Aster

Thistle

Dock

Clover



Purple vetch (wild pea)

Grasses

SEED SCAVENGER HUNT

1. A flying seed
2. A juicy white seed
3. A dark brown seed
4. A soft seed
5. A sticky seed
6. A twisted seed pod
7. A red seed
8. A seed a robin would eat
9. A strange seed
10. A clump of seeds

DIRT IS DIFFERENT

This program choice occurs **Outdoors**.

The students are taken **"off trail"**, onto the **flood-plain**. **Conservation** will be discussed, and students asked to stay on the trail in future visits with their family and friends.

At the **Clay Pit**, a hole dug in the ground, students will examine different layers of dirt. Each will be given a sample of **topsoil** and asked to **describe** it. Use of all **senses** is encouraged.

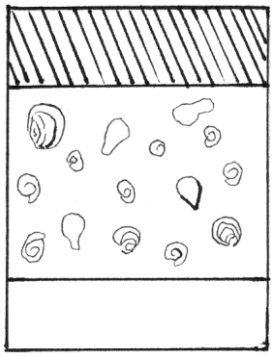
Each student is then given a sample of marine **clay** and is asked to describe it. After students have "discovered" the **sea shells**, the story of **Glaciation** is told:

> About 15,000 years ago, the climate became very cold. Snow, because it didn't melt, became deeper and deeper and formed a large **glacier** over Victoria and most of Canada. In some areas, the glacier was more than one kilometre high. This compacted the land. About 12,000 years ago, the climate became warmer. The melting glacier started to slide over the land. It ground some of the bedrock into **rock powder**. The rock powder was carried away by the melting water that formed streams and rivers. It made the water muddy looking. Gradually, the water slowed down, and the rock powder "settled out" forming muddy clay. The water flowed into the ocean and made it deeper. The ocean water then **flooded** over the compacted land. Victoria was then covered by **ocean water**. The animals in the ocean would eventually die, and their bodies would sink to the bottom. The soft parts would be eaten by others, or rot. The hard parts, like **shells**, didn't rot as much. So we can see them in the clay. (Later, fresh water snails left shells.) With the heavy glacier gone, the land slowly rose out of the ocean; the rain washed away the salt water and left the land that is Victoria and Vancouver Island.

A **core sample** is taken using a **corer** to show the **Soil Profile.**

SOIL PROFILE

at Clay Pit



topsoil

clay with shells

clay without shells

Students are asked to **compare** the **clay** and the **topsoil**:

Clay is made of rock powder, no rotting plants.

Topsoil has rotting plants (dark colour) **and clay.**

At the **Peat Pit**, a deep hole on the lower flood plain, students will examine a piece of **peat**, and be asked to describe it:

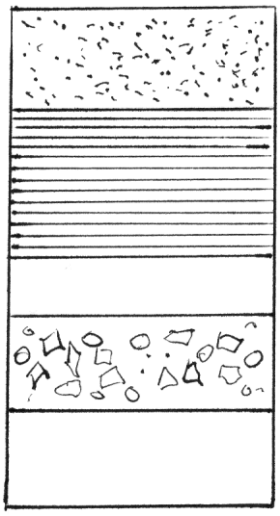
Peat is made of dead, partially decayed, layered plants.

These plants have been compressed by the heavy weight of the flood water and plants on top. The dead plants are no longer rotting.
The plants on the flood-plain die in the fall and become submerged. Bacterial decay proceeds. This forms organic acids that are eventually toxic to the bacteria and stop the decay process. The result is a brown mat composed of the partially decomposed plant material and waste acids called **peat**. There is no clay (rock powder) or rocks in this peat. Students can squeeze the peat to discover that it **holds water**. They then jump up and down on the peat to feel the **spongy peat bog**.

A **core sample** is taken to show the layered peat. Students **predict** whether it will be easier or harder to take a core sample at this sit.
Under this layer (50 - 150cm) is a layer of marine clay, then a layer of glacial till (rocks, gravel, sand left by the moving glaciers) and under this is bedrock. These layers are not explored.

SOIL PROFILE

at Peat Pit



decaying plants (humus)

peat

clay

glacial till

bedrock

At the **Lollipop Wharf**, the **Eckman Grab, "Mr. Jaws"**, is used to collect a sample of **lake sediment**. Students are given samples in their tubs and asked to describe it. The smell of **rotting plants** is obvious. In the fall, the floating and lake edge plants die back and rot. The organisms that feed on the dead plants use up oxygen and eventually the anaerobic (non-oxygen using) bacteria decay the plants. These produce natural gases like methane and hydrogen sulphide.

SUMMARY OF DIFFERENT KINDS OF DIRT
at Swan Lake

	Rock powder	Rotting Plants	Plants no longer rotting
Topsoil	*	*	
Clay	*		
Peat			*
Lake sediment		*	

We greatly appreciate students' artwork and writing. If you send us these about their trip to Swan Lake we will display as many as we can. Displays are put up in the long hallway to the left of the front door, in the classroom and in the Library.