



**Science Unit: *Animal Growth and Changes***  
**Lesson 4: *Fieldtrip to Hastings Park Pond***

School Year: 2012/2013  
Developed for: Hastings Elementary School, Vancouver School District  
Developed by: Linda Herbert (scientist); Natacha Corrie and Chris Donegan (teachers)  
Grade level: Presented to grade 2/3; appropriate for grades 1 – 7 with age appropriate modifications  
Duration of lesson: 3 hours (1/2 day – either before or after lunch)  
Notes: This is an extension of Lesson 4: Pond Ecosystem Fieldtrip in the Water science unit, Scientist in Residence Program.  
<http://scientistinresidence.ca/science-lesson-plans/water/>  
Nets, bug viewers and waterproof paper can be purchased from Dynamic Aqua Supply Ltd. In Surrey: <http://www.dynamicaqua.com/>. Supplies can be picked up or delivered.  
Thank you to Karen Needham, Curator of the Spencer Entomological Museum (UBC) for providing assistance and materials for bug identification. Displays of aquatic/pond organisms can be borrowed from the museum for classroom use. Contact [needham@zoology.ubc.ca](mailto:needham@zoology.ubc.ca) for details or visit <http://beatymuseum.ubc.ca/collections/entomological>.

**Objectives**

1. Students will learn about a pond ecosystem and collect and examine pond organisms.
2. Students will practice identifying pond organism they collect.

**Background Information**

See original lesson: Lesson 4: Pond Ecosystem Fieldtrip in the Water science unit, Scientist in Residence Program. <http://scientistinresidence.ca/science-lesson-plans/water/>

**Vocabulary**

Pond: A small body of fresh water (smaller than a lake) shallow enough for sunlight to reach the bottom and for rooted plants to grow.

Invertebrate: Animal without a backbone.

Aquatic invertebrate: Animals such as insects, crustaceans, and worms that spend part or all of their life cycles in water.

Incomplete metamorphosis: For aquatic insects: a type of insect development with distinct egg, naiad, and adult stages; the naiad and adult share some similar characteristics and there is no inactive pupa stage; naiad is an aquatic nymph.

Complete metamorphosis: A type of insect development characterized by changes in the body form of insects that include egg, larva, pupa (resting and reorganizing stage) and adult stages; the larval stages look different from the adult stage.



## SCIENTIST IN RESIDENCE PROGRAM

- Insect: A class of invertebrates with (among other characteristics) an exoskeleton, six legs, a three-part body and one pair of antennae
- Exoskeleton : An external skeleton. A hard outer shell possessed by insects and some other invertebrates instead of an internal skeleton.
- Endoskeleton: an internal skeleton, such as that possessed by people and other mammals.

### **Information on Hastings Park**

**Location:** Northeast Vancouver, part of the current PNE grounds and enclosed by Hastings St., Renfrew St., McGill St. and Highway 1/Bridgeway St. The pond is located near the southeast corner of the property. Access to the pond is plentiful and there are several locations that are suitable for this fieldtrip. The location used for this lesson was a large open area on the north edge of the pond with lots of vegetation and several large stone “benches” that could be used as tables to place the organism trays on for viewing.

**Website:** <http://vancouver.ca/parks-recreation-culture/hastings-park.aspx>; <http://www.hastingspark.ca/>;

### **Materials & Activity Instructions**

See original lesson: Lesson 4: Pond Ecosystem Fieldtrip in the Water science unit, Scientist in Residence Program.

\*See separate worksheet developed for this lesson (Pond Checklist)

Scientists:

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Pond Organism Checklist

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- Fly larvae
- Mayfly larvae
- Damselfly larvae
- Dragonfly larvae
- Stonefly larvae
- Caddisfly larvae
- Water beetle larvae

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Fly

Mayfly

Damselfly

Dragonfly

Stone fly

Caddis fly

Back swimmer

Water boatman

Water beetle

Giant water bug

Water strider

Water scorpion

Freshwater shrimp / scud

Planaria

Water bear

Water flea

Fly

Mayfly

Damselfly

Dragonfly

Stone fly

Caddis fly

Back swimmer

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