SCIENTIST IN RESIDENCE PROGRAM

Science Unit **Cycles: water and life**

Lesson 2 ***Pond animal research project***

Summary In this lesson, students will use a book or selected website to research a local pond animal.

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Grade level	2
Class time needed	3-4 lesson blocks to complete and present research
Delivery date	May 4th, 2018

LEARNING OBJECTIVES

1	To learn about a local and indigenous pond dependent animal
2	To read and distill scientific information
3	To present research findings to fellow classmates

SUPPLIES

- Written material (non-fiction book or website) for each pond animal that includes a drawing or picture, a description of the lifecycle, information about the animal's habitat and habits, and other interesting facts. Pond animal research sources are provided below.
- Booklets to record student research.
- Presentation materials (i.e. art supplies, poster board, diorama or smartboard).

BACKGROUND INFORMATION

Scientist use secondary research to learn about what other scientists have discovered, to explore which scientific questions remain to be answered, and to help design new experiments. Secondary research helps students develop skills to be discerning about the information they read, especially on-line sources, and to distill information down to the most important information and to present their research in a clear and interesting way for their fellow classmates.

This research project focuses on pond animals indigenous to Metro Vancouver. The project is an opportunity for students to:

- Gain a deeper understanding of animals in their community.
- Increase their appreciation of nature.
- Learn how animals are dependent on the water cycle.

Suggested list of animals to research:

Invertebrates	Birds	Amphibians	Mammals
Daphnia (water flea) Cyclops (water hopper) Water mite Dragonfly Mayfly Water boatman	Red-winged blackbird Great blue heron Bufflehead	Northern pacific tree frog	Beaver Little brown bat

THE LESSON

Pre-lesson	Visit a local pond a couple of times before you start this project. Once to observe what's above the water and a second time to do a pond dip. Here are two Scientist in Residence lessons to help you plan your field trips: Fieldtrip to Hastings Park Pond in the Science Unit Animal Growth and Changes. Pond Ecosystem Field Trip in the Science Unit Water.
The Hook	What animals did we see at the pond? Make a list. What do you wonder about them? Make another list.
Hands-on Activity	**Pond animal research project.** In pairs or solo, students' research one of the pond animals listed above. Ask students to: • Draw a picture of the animal as an adult. • Draw the lifecycle. • Describe where the animal lives • Describe what the animal eats and what eats it. • What are three interesting facts about the animal? • How does this animal depend on the water cycle?
Wrap Up	Do the students have any questions? After a few research blocks invite students to share what they learned with the class. Students could develop materials for their presentations such as a skit, diorama, poster, or smartboard presentation.

VOCABULARY

Appearance	A description of what the animal looks like.
Distill	To extract the most important information from your research sources.
Habitat	The home or environment of an animal, plant, or other organism.
Life cycle	The series of life stages and changes an organism goes through during its life.
Invertebrate	An animal without a backbone, such as an insect, arachnid, worm or mollusk.

REFERENCES (websites accessed May 2018)

Mammals

Beaver
www.canadiangeographic.ca/article/animal-facts-beaver
naturemappingfoundation.org/natmap/facts/beaver_k6.html
www.activewild.com/north-american-beaver-facts-for-kids/
www.hww.ca/en/wildlife/mammals/beaver.html

Little brown bat
www.biokids.umich.edu/critters/Myotis_lucifugus/
www.batworlds.com/little-brown-bat/
www.nhptv.org/natureworks/littlebrownbat.htm
www.hww.ca/en/wildlife/mammals/little-brown-bat.html

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Amphibians

Pacific tree frog
www.animalspot.net/pacific-tree-frog.html
www.env.gov.bc.ca/wld/documents/pacifictreefrog.pdf
northwestwildlife.com/wp-content/uploads/2017/01/Pacific-tree-frog.pdf
www.mister-toad.com/PacificTreeFrog.html

Invertebrates

Daphnia
Loewer, P. and J. Jenkins. 2016. *Pond Water Zoo: An Introduction to Microscopic Life.* Atheneum Books for Young Readers.

Cyclops
Loewer, P. and J. Jenkins. 2016. *Pond Water Zoo: An Introduction to Microscopic Life.* Atheneum Books for Young Readers.

Water mite
Loewer, P. and J. Jenkins. 2016. *Pond Water Zoo: An Introduction to Microscopic Life.* Atheneum Books for Young Readers.

Dragonfly
www.biokids.umich.edu/critters/Anisoptera/
british-dragonflies.org.uk/content/biology-ecology

Mayfly
www.bugfacts.net/mayfly.php
www.britannica.com/animal/mayfly

Water boatman
www.bugfacts.net/water-boatman.php
www.pestwiki.com/water-boatmen-facts-prevention/

Birds

Bufflehead
www.biokids.umich.edu/critters/Bucephala_albeola/
naturemappingfoundation.org/natmap/facts/bufflehead_k6.html
www.allaboutbirds.org/guide/bufflehead

Great blue heron
www.allaboutbirds.org/guide/Great_Blue_Heron/id
naturemappingfoundation.org/natmap/facts/great_blue_heron_k6.html
www.biokids.umich.edu/critters/Ardea_herodias/

Red-winged blackbird
www.allaboutbirds.org/guide/Red-winged_Blackbird/id
naturemappingfoundation.org/natmap/facts/red-winged_blackbird_k6.html
www.biokids.umich.edu/critters/Agelaius_phoeniceus/

EXTENSION

Students create a visual or performance of the information they distilled, such as a skit, a diorama, poster or smart board presentation.