THEME:	**Sustainability**
SCOPE & SEQUENCE UNIT:	**Water Pollution**
OBJECTIVE:	**It's blue and green and in the lake**
ACTIVITY:	**Learning from the Expert – Local Water Ecologist (Limnologist)**

Notes:	In-class activity
Teacher Prep.:	Prior to this activity, do "Questions for Guest Speakers" activity. This also implies that you have arranged for a local expert limnologist to come in and speak to the students. Municipal or provincial government agencies should be able to assist in locating such an expert. A big issue with our lake is blue-green algae blooms and microcystins, so this activity is focused specifically on that information, however, different lakes have different issues of pollution, in which case the focus of this activity would shift, although the structure would remain the same. Assign a student to thank the guest speaker on behalf of the class at the close of the session. Suggest the student prepare for this by thinking about what they will say and writing it down.
Time:	~45 minutes; 10 minutes student prep., 20 minutes talk, 15 minutes questions/explanations

Skills:

- Communication (listening, note-taking)
- Critical thinking
- Life & career planning
- Ecological literacy

Objectives:

- To learn about local water pollution in lakes (specifically blue-green algae)
- To learn to actively listen and discern important information from a guest speaker
- To practice note taking while listening and following a live presentation

Vocabulary:

Water Pollution: The contamination of a water body (creek, river, lake, groundwater). It happens when contaminants enter, whether directly or indirectly, into the water body, adversely affecting plants and organisms living in the water, and potentially impacting drinking water quality also.
Blue-green algae: A group of organisms called "pond scum" or by their scientific name, Cyanobacteria that can occur in a variety of colours in water. They are a group of bacteria that make their food through photosynthesis. They form in shallow, warm, slow-moving or still water. Some types produce toxins within their cells. They can multiple quickly in lakes with high phosphorus level. A mass of blue-green algae is referred to as a bloom.
Toxin: A poisonous substance produced within a living cell or organism.
Microcystins: One group of toxins produced and released by Cyanobacteria or blue-green algae that can be toxic to plants, livestock and humans.
Watershed: The area of land where all of the water that drains off of it or is under it goes eventually into the same water body (creek, river, lake, ocean).
Phosphorus: A natural chemical element (P) that influences the growth of plants, along with nitrogen and potassium. Phosphorus is often a limiting factor to growth, meaning that when it is in limited supply relative to nitrogen and potassium, it limits plant growth. In freshwater systems, an excess abundance of phosphorus promotes the growth of algae such as blue-green algae.
Limnology: The ecological study of freshwater systems. It covers biology, chemistry, physical properties, and geology.

Materials:

Students' questions each written out
Guest Speaker Notes Student Page

Introductory Discussion:

Before the guest speaker arrives, prepare students - reviewing the Student Page (students can fill in initial information) and ensuring each student has their question ready.

Introduce the guest speaker to the students, their affiliated organization and their topic. Remind the speaker of their speaking time, and that the students will be taking notes and will have questions to ask.

Reflection Discussion:

Ask the guest speaker how they decided on their kind of work, and what their training involved. Ask students to offer something new and interesting they learned from the presentation. Cue the student to thank the speaker.

Student Page:

Guest Speaker Notes

Resources:

Blue-Green Algae (cyanobacteria) and their toxins – Health Canada

SSI Specific:

St. Mary Lake & Blue-Green Algae

Name: _____ Date: _____
(mm/dd/yyyy)

Guest Speaker: _____

Organization: _____

Topic: _____

My notes: _____
(use bullets) _____

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Significant connection for me:

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