ASELL SCHOOLS
Advancing Science & Engineering through Laboratory Learning   L A B O R A T O R Y   O V E R V I E W

Freshwater Indicator Species: Overview

Introduction/Background

This activity will place students in the position of a biologist who has been contracted by the Environment Protection Agency (EPA) to report on the quality of water samples. Students will have to identify different freshwater aquatic organisms from water samples, assign them SIGNAL scores, then draw conclusions on the quality of the different water samples.

Curriculum Outcomes: Victorian Curriculum F-10

Levels 9 and 10

> **Biological Sciences**
> - Ecosystems consist of communities of interdependent organisms and abiotic components of the environment; matter and energy flow through these systems (VCSSU121).
>
> **Recording and processing**
> - Construct and use a range of representations, including graphs, keys, models and formulas, to record and summarise data from students' own investigations and secondary sources, to represent qualitative and quantitative patterns or relationships, and distinguish between discrete and continuous data (VCSIS137).
>
> **Analysing and evaluating**
> - Analyse patterns and trends in data, including describing relationships between variables, identifying inconsistencies in data and sources of uncertainty, and drawing conclusions that are consistent with evidence (VCSIS138).
>
> **Communicating**
> - Communicate scientific ideas and information for a particular purpose, including constructing evidence-based arguments and using appropriate scientific language, conventions and representations (VCSIS140).

Target Audience

This activity is suitable for students in years 9 and 10.

Duration of Activity

This activity takes 1.5 – 2 hours to complete.

Learning Objectives

Upon completion of this activity, students should be familiar with the concept of indicator species, and the SIGNAL score system. Students should also be able to interpret SIGNAL scores and draw conclusions about water quality from them.

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