



Schools on Board Lab/Fieldwork Activity Example

(As it appears in the Student Handbook!)

MICROBIAL COMMUNITIES IN THE COASTAL ARCTIC OCEAN HYPOTHESIS DRIVEN LAB ACTIVITY

Lab Created by: Warwick Vincent & Sébastien Roy

Lab Instructor: Sébastien Roy *Subgroup:* Microbial communities and heterotrophy

This lab will take place: inside

Time required to complete this lab:

Investigation: 1.5 h:

Student output: 2.5 h (calculations)

PREPARATION

BACKGROUND

Lab will center on the measurement of bacterial and protist concentrations in the Arctic Ocean using filtration protocols and the ship-board epifluorescence microscope. We will provide all materials. The students will then use these numbers to calculate the biomass of these microbe in the coastal ocean and will compare these with estimates of biomass of seals, fish and whales (data that we need to track down for order of magnitude estimates).

RESEARCH QUESTION

How important are bacteria and other microbes (such as nanoflagellates) in the coastal Arctic ocean ecosystem?

HYPOTHESIS

e.g. Microbes are the dominant biomass component in the Arctic Ocean ecosystem.

In part this will hinge on what is meant by 'dominant' and 'microbes' – topics to be discussed with the students!

EQUIPMENT/INSTRUMENTATION

Epifluorescence microscope, filtration equipment, filters, samples. We will rotate the students, 3 at a time.

METHODS

To develop on the ship

DATA COLLECTION

To develop on the ship

RESULTS (Student Output)

To develop on the ship

DISCUSSION/CONCLUSION