Grade 11

Effect of Lifestyle choices on heart function in Daphnia model

Students will learn how research scientists attempt to understand how our lifestyle choices affect our heart at the organ and organism level.

Online BIOlab option: live virtual field trip via Teams, Meet or Zoom where students will direct an experiment on Daphnia. We will collect data together in real time and provide results for students to analyze.

Time required
1.5h (flexible)

Grade 11 students are learning detailed physiology of the human heart and how lifestyle choices can affect their health. Students will get a chance to conduct their own research experiment, just like basic medical scientists, by choosing a common substance they would like to study (Eg: Caffeine, alcohol, cigarettes, adrenaline, etc...) and investigate how it affects the heart rate of *Daphnia magna*. Students will learn how to conduct a research experiment, collect and analyze data, and make their own conclusions based on their results.

Specific learning outcomes addressed: B11-1-01; B11-3-01; B11-3-09; B11-3-11; B11-3-12; B11-6-17

Time Required	Student Experience
Prior to your visit	Read handout with background information to help your students decide which chemical they would like to study and how they will collect data.
10 min	Introduction to the Research Centre and research interests, explain heart research and techniques
10 min	Introduction to *Daphnia magna* and how to set up our experiment
45 min	Discuss hypotheses, perform experiment, and collect data
15 min	Analyze data, interpret results, and come up with conclusions
10 min	Questions and wrap up

Please note: times are approximate, and can be scaled to whatever time you have available! If time does not allow for all data collection in one session, we can record and provide data for students to analyze at a later date in class or at home.