

Grade 8

Heart research from cell to system

Students will experience the ways in which research labs and hospitals investigate heart disease with an emphasis on different cell types in medical research

BIOLab Experiences Diagnose a patient with heart disease, use an EKG machine, manipulate live cells using common cell culture techniques, examine tissue under the microscope, dissect a pig heart.

Time required
Half day (2h)

Grade 8 students receive their first introduction to cell theory in the Cells and Systems cluster, and the BIOLab wants to show them how important cells are in the study of disease. By working with live cells and tissues from our labs, students will experience how basic medical scientists observe the mechanisms of disease and how these findings relate to the health of the whole organism.

Specific Learning Outcomes Addressed

What students will experience in the BIOLab

8-1-01	Use appropriate vocabulary related to their investigations of cells and systems.	Meet scientists, discuss the relevance of cells in research
8-1-03	Describe cell theory.	Importance of cells in various human diseases.
8-1-04	Identify major events and technological innovations that have enabled scientists to increase our understanding of cell biology.	Use light and phase-contrast microscopy to view live cells in culture.
8-1-06	Demonstrate proper use and care of the microscope to observe the general structure of plant and animal cells.	Use microscopes to view different tissue samples.
8-1-09	Describe why cells and tissues are specialized in multicellular organisms, and observe examples.	Observe different cell types related to their role in disease
8-1-11	Describe the structure and function of the heart and the path of blood to and from the heart through its four chambers.	Observe and dissect a pig heart with a focus on how heart disease can affect different parts of the cardiac anatomy.
8-1-12	Compare and contrast the structure and function of arteries, veins, and capillaries.	Identify and open the coronary arteries on a pig heart sample, measure blood pressure.
8-1-18	Research and describe disorders/diseases that affect body systems, and identify possible preventative measures.	Examine a patient case related to activities and identify risk factors for disease, run common tests (EKG, blood pressure) to understand their connection to disease.



Hôpital St-Boniface Hospital

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