



Achievements and Competencies

Learning Outcomes

Grades 7-9
Cells, tissues, organs and systems

Achievements and Competencies are based on the Common Framework of Science Learning Outcomes (K-12) set by the Canadian Council of Ministers of Education (1997).

Specific Expectations

Grade 8

LIFE SCIENCE

Cells, tissues, organs and systems

304-7 Explain structural and functional relationships between and among cells, tissues, organs and systems in the human body.

In the *Cardiac Pop Pump* activity, students gain a hands-on understanding of the movement of blood around the body by squeezing pop bottles that represent the chambers of the heart. *Cardiac Pop Pump* demonstrates some of the basic components of the circulatory system. Varying types of tubing are used to represent the aorta, vena cava, pulmonary artery and pulmonary veins and explain the relationship between the structural and functional aspects of the heart.

304-8 Relate the needs and functions of various cells and organs to the needs and functions of the human organism as a whole.

The heart is an incredible and complex organ. It is constantly pumping blood in order to keep us alive. The movement of blood around the body, through the squeezing of the pop bottles that represent the chambers of the heart, demonstrates how the heart functions to sustain the human organism as a whole.

304-10 Describe examples of the interdependence of various systems of the human body.

The heart beats about 70 times per minute, over 100,000 times per day and almost 40 million times every year to keep us alive. Various systems in the human body depend on the heart to circulate blood throughout our body.