

Quebec - Achievements and Competencies

Learning Outcomes

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|---------------------------|
| Cycle 2 (Gr. 9-10) |
| Systems |

The Quebec Achievements and Competencies are based on the Progression of Learning Outcomes derived from the Quebec Education Plan set by the Ministère de l'Éducation, du Loisir et du Sport.

Specific Expectations

GENERAL EDUCATION PATH

CYCLE 2 (Gr. 9-10) — Secondary 3

LIVING WORLD

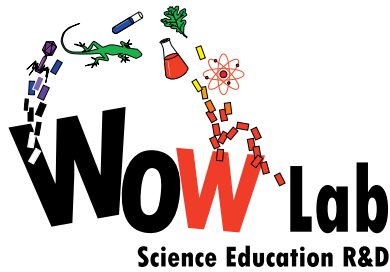
D. Systems

2. Respiratory and Circulatory Systems

d. Circulatory system

- i. Names the main parts of the circulatory system (heart, types of blood vessels, pulmonary and systemic circulation)
- ii. Explains the role of the circulatory system (transportation and exchange of gases, nutrients and waste)
- iii. Describes the function of the main parts of the circulatory system (heart, arteries and veins, capillaries)

Cardiac Pop Pump demonstrates some of the basic components of the circulatory system. 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. Various 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.



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Cardiac Pop Pump - Quebec - Achievements and Competencies

APPLIED GENERAL EDUCATION PATH

CYCLE 2 (Gr. 9-10) — Secondary 3

LIVING WORLD

C. Systems

2. Respiratory and Circulatory Systems

d. Circulatory system

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Techniques

B. SCIENCE

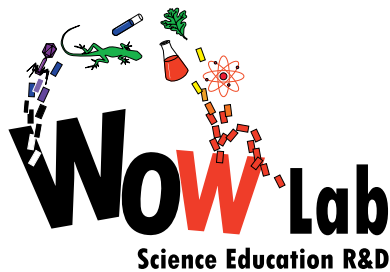
c. Designing and creating an environment

- i) Uses environmental design and construction techniques that respect the characteristics of the habitat

Strategies

A. EXPLORATION STRATEGIES

4. Becoming aware of his or her previous representations
5. Drawing a diagram for the problem or illustrating it
6. Formulating questions
7. Putting forward hypotheses (e.g. individually, in teams, as a class)
11. Taking into account the constraints involved in solving a problem or making an object (e.g. specifications, available resources, time allotted)
13. Using different types of reasoning (e.g. induction, deduction, inference, comparison, classification)
15. Ensuring that the procedure is appropriate and safe and making the necessary adjustments



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B. INSTRUMENTATION STRATEGIES

3. Using technical design to illustrate a solution (e.g. diagrams, sketches, technical drawings)
4. Using different tools for recording information (e.g. diagrams, notes, graphs, procedures, logbook)
5. Using a variety of observational techniques and tools
6. Selecting suitable techniques or tools for observation

C. ANALYTICAL STRATEGIES

1. Identifying the constraints and important elements related to the problem-solving situation
3. Using different types of reasoning (e.g. inductive and deductive reasoning, comparison, classification, prioritization) in order to process information

D. COMMUNICATION STRATEGIES

1. Using different means of communication to propose explanations or solutions (e.g. oral presentation, written presentation, procedure)
3. Exchanging information
4. Comparing different possible explanations for or solutions to a problem in order to assess their relevance (e.g. full-group discussion)
5. Using tools to display information in various formats (e.g. data tables, graphs, diagrams)