

OVERVIEW OF THE LES

«Neither hot nor cold!»

Target audience:	1 st cycle secondary school - adapted classes
Team or individual work:	Individual work and work in teams of two, depending on the activity
Class time required:	7 - 75 minute periods, depending on the choice of organisation

Intentions

Pedagogical Aim

- Allow the student to become familiar with the experimental and design processes.
- Allow the student to grasp concepts from the living, material, Earth and Space and technological worlds.
- Allow the student to become familiar with techniques in science in the 1st cycle secondary school science and technology program.

Educational Aim

- Face the student with an attainable yet fun challenge in order to attract his interest and act upon his motivation.
- Bring the student to make informed choices regarding lifestyle habits and to the consequences that these may have on his health.
- Understand how humans can protect themselves from temperature differences thanks to technology and using scientific knowledge.

Targeted disciplinary competencies:

C-1 Seeks answers or solutions to scientific or technological problems

C-2 Makes the most of his/her knowledge of science and technology

C-3 Communicates in the languages used in science and technology

The student must take into account the constraints associated to the fabrication of his glove. He must carry out experimental research and judge his own and his peers' experimental results. He must make judicious design choices, justify them in relation to scientific concepts and compare his solution to adaptations seen in the animal world.

Targeted cross-curricular competencies:

Adopts effective work methods is at the heart of this learning situation. The student must evaluate the available resources, anticipate the process to follow, readjust his actions as needed and bring the task to term. He will have to judge his methods and justify his choices.

Broad Area of Learning	Health and Well-Being <i>Axis of development:</i> <i>Knowledge of the consequences of his personal choices on his health and well-being.</i> The experimental and design processes allow the student to make informed choices related to the risk factors associated to extreme weather conditions.
Involved world(s) and required concept(s)	Material World <ul style="list-style-type: none"> • Temperature Living World <ul style="list-style-type: none"> • Species • Physical and behavioural adaptations • Taxonomy • Characteristics of living things Earth and Space World <ul style="list-style-type: none"> • Natural manifestations of energy • Light (its properties) Technological World <ul style="list-style-type: none"> • Specifications booklet • Materials • Energy transformation
Strategies and techniques	Strategies <ul style="list-style-type: none"> • Divide a complex problem into simpler sub-problems • Check the logic of one's process and carry out adjustments to it when necessary Techniques <ul style="list-style-type: none"> • Safe usage of laboratory materials • Using measurement instruments
Community resources	<ul style="list-style-type: none"> • Technology of climate adaptation • Climate changes and species survival • Textiles (fibres of vegetal, animal and synthetic origin) • Inventions: Inspiration from nature when creating objects
Evaluation: The student booklet will easily allow the teacher to judge the development of the three disciplinary competencies. The student booklet includes indications to ease the evaluation of each of these competencies. Given the time allotted to this LES, it is advisable to target one or other of the disciplinary competencies.	
Global context: Researchers are leaving for an expedition in a region with an inhospitable climate. They will affront cold, humidity and wind. You must suggest the combination of fabrics for the creation of a glove best adapted to these conditions.	