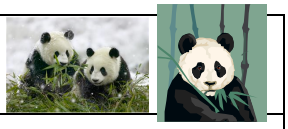
OVERVIEW OF THE LES
« Panda » ST and AST streams

NOTE:	**This activity was designed within the framework of training sessions. It may require adaptation before being used with students.**

Target audience: **Type of work:**	Students in the 1st cycle of secondary school Individual and in teams of two	
Class time required:	4 - 75 minute periods	

Pedagogical aims

- Allow the student to become familiar with the analytical process and to acquaint himself with the scientific observation and opinion building processes.
- Allow the student to become familiar with concepts from the living and technological worlds.

Educational Aim

- Face the student with a choice of learning sequences in order to help him to outline his fields of interest and to better define his future school path.
- Understand that the panda today is an endangered species and that man has a responsibility and power of action regarding the environment.
- Face the student with an attainable challenge allowing him to appreciate the contribution of scientific knowledge to his understanding of the world.

Targeted disciplinary competencies:

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 gets familiar with and uses concepts related to animal classification, levers and diet to explain the distinctions between the panda and the black bear. He uses the appropriate terminology and languages in his explanations.

Targeted cross-curricular competencies: None

Broad Area of Learning	***Orientation and entrepreneurship*** *Focus of development:* *Self-knowledge and awareness of his/her potential and how to fulfill it* The choice of learning sequences in the framework of this LES is related to the different paths in the second cycle of secondary school. It confronts the student with his qualities, tastes and aspirations and to their influence on his motivation to persevere in his school work. This LES is a presentation tool, in action, of the choice of paths with which the students in the second cycle of secondary school will be faced in regards to their training in science and technology. ***Environmental awareness and consumer rights and responsibilities*** *Focus of development:* *Construction of a viable environment based on sustainable development* The study of the giant panda's case and of its extreme specialisation due to adaptations to its environment allow the student to grasp how the exploitation of territory by man can have an influence on biodiversity.
Compulsory concept(s)	**Technological world:** • Principles diagram • Effects of a force • Simple machines • Force and movement **Living world:** • Habitat • Ecological niche • Species • Physical and behavioural adaptations • Taxonomy
Community resources	*History* • Darwin and Lamarck • Linné • Cladistics *Environment* • International treaties on the protection of the environment Protected areas

Processes	**ST** The **analysis process** and the introduction to the **opinion building process** are at the heart of this LES. The student is invited to observe characteristics present in different species of animals in order to classify them. He analyses how various objects work and establishes links with different jaws presented to him. Beginning with the characteristics of the jaws of the panda and the black bear, close relations according to cladistics, he must describe each of their diets. **AST** The **analysis process** is at the heart of this LES. The student analyses how various objects work and establishes links with different jaws presented to him. Beginning with the characteristics of the jaw of the panda, he will have to carry out and diagram assorted models.
Strategies, techniques and attitudes	**Exploration strategies:** • Divide a complex problem into simpler sub-problems • Resort to various methods of reasoning (induction, deduction, inference, comparison, classification). • Resort to consignment tools **Techniques** • Diagramming **Attitudes:** • Concern for objectivity • Use of appropriate language • Interest in confronting one's ideas to those of one's circle • Respect for life and for the environment
Possible evaluation: This LES allows for the evaluation of the three last criteria of competency 2 and all of competency 3.	
Global context: **ST** The panda is a member of the order of Carnivores, though his diet is almost exclusively herbivorous. How did it come to that? Why is its survival in question? **AST** Do similarities exist between various objects and models of jaws? Could you explain them and model the jaws of the panda and the black bear, close relatives?	