

Sciences de la Vie et de la Terre - Earth and Life Sciences

1^{ere} (11th Grade FB) [4 periods per week]

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Course Description

The goal of this class is for students to acquire deeper cognitive skills and knowledge in Biology and Geology, to prepare them for the baccalaureate exam and for post-secondary studies in these two subjects.

Knowledge content in each part will be constructed by the students themselves as often as possible through guided document and data analysis and/or practical activities, allowing them to acquire reasoning and technical skills and develop a sense of self-efficacy, initiative and autonomy. Reflection is a key component in the learning process and will be evident throughout the program to facilitate evaluation and progress as a learner. Metacognition empowers students to distinguish between opinion, beliefs and scientific constructs and their interplay in the production of knowledge.

Skills mobilized during the SVT class are embedded in 5 areas:

- Practicing a scientific approach: formulating scientific questions; formulating hypotheses; designing and implementing strategies to solve scientific problems (experimental protocols, observations, modelizations); collecting, analyzing and interpreting data; drawing conclusions from data; distinguishing beliefs or opinions from scientific knowledge; understanding links between natural phenomenon and the mathematical language; breaking down complex observable phenomenon in fundamental elements.
- Making, creating, implementing: choosing appropriate notions, tools and techniques to explain natural phenomena scientifically; implementing a protocol.
- Practicing scientific languages: communicating results; arguing about choices; using relevant data format, digital tools and scientific languages.
- Using tools and methods: searching and obtaining relevant and reliable information from the internet; using relevant data from a database or a program to solve a scientific problem.
- Engaging in ethical, rational and responsible behaviors: identifying impacts of human activities on the environment and public health at different scales; adopting responsible behaviors in terms of environmental protection and health; engaging in the elaboration of safety rules in the lab and on the field.

Timeline

Part 1: Transmission, variation and expression of genetic information / 36 hours (9 weeks).

Part 2: Internal dynamic of the Earth / 34 hours (8-9 weeks)

Part 3: Ecosystems and environmental services / 24 hours (6 weeks).

Part 4: Human body and health / 38 hours (9-10 weeks).