

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

1<sup>ere</sup> (11<sup>th</sup> Grade FB) [4 periods per week]

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## Course Description

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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

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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).