

# Physics and Chemistry

4<sup>eme</sup> (8<sup>th</sup> Grade) [1.5 periods per week]

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## Course Description

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The goal of this class is for students to acquire fundamental cognitive skills and knowledge in Physics and Chemistry. 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. Skills mobilized in this class are embedded in 5 domains of skills, knowledge and culture as follows:

- Practicing scientific languages (Domaine 1): oral and written expression; reading and analyzing documents presented in different formats to communicate; choosing appropriate formats to represent data.
- Using tools and methods (Domaine 2): searching and obtaining relevant and reliable information from the internet; using relevant data from a database or a program to solve a scientific problem.
- Citizenship education (Domaine 3): Engaging in ethical, responsible and rational behaviors in terms of health and sustainable development; engaging in the elaboration of safety rules in the lab and on the field.
- Practicing a scientific approach (Domaine 4): formulating a scientific question; formulating hypotheses; designing an experimental protocol; collecting, analyzing and interpreting data; drawing conclusions from data.
- Making, creating, implementing (Domaine 4): choosing the appropriate tool to measure and observe; implementing a protocol.
- Representations of the world (Domaine 5): situating scientific discoveries in time; comprehending scales of space and time; distinguishing beliefs or opinions from scientific knowledge.

## Timeline

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Part 1: Organization and transformation about matter / 20 hours (13 weeks)

Part 2: Movement and Interaction / 9 hours (6 weeks)

Part 3: Energy and its conversions / 15 hours (10 weeks)

Part 4: Signals to observe and communicated / 7-8 hours (5 weeks)