



Loyola

HIGH SCHOOL

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Sec. 1 Science & Technology Cycle 1 (Year 1)

Goals:

- Students will participate in hands-on activities and group-work.
- Students will be able to apply class material to everyday life and better understand scientific phenomena they encounter in the media and in future classes.
- Students will be more inclined to pursue or consider a science or technology-related career.

Requirements:

Students must be well organized. Homework usually consists of simple worksheets, textbook readings and preparing for quizzes and tests. There is a 20% late penalty for missing work or work not done.

Note that if a student misses a class for whatever reason, it is THEIR responsibility to make-up the missed work. If a student misses a lab then they have 24 hours to contact Mr Dagher (daghere@loyola.ca) to arrange a time to conduct the lab. They must also notify Mr. Sorensen, SJ at least 48 hours in advance if they have prior knowledge of an upcoming absence (for sports or any other activity).

Extra help in the form of tutorials and meetings is offered on every Day 4 at 3:15pm (Room TBD) or as required by appointment (sorensene@loyola.ca).

Resources:

- Text: Eureka! Student Textbook
- Google Classroom - Sec 1 Science and Technology
- LHS Scientific Laboratory Report Guidelines (available on Classroom)
- Chromebooks - access to applications and online resources

Materials:

- 3 ring binder (1 or 1 1/2 inch) with 5 **dividers**
 - **Single topic binder (not to be shared with other courses)**
- Approx. 20 sheets of Hole-punched Graph Paper (ideally **metric**)
- One package of loose leaf
- Several pens and pencils
- Scientific calculator (same one as math class)
- Short plastic ruler (approximately 15 cm)
- Chromebook
- Headphones - ideally earbud type.



Evaluation, Components & Competencies:

| Component | Science Competencies | Examples | Weighting |
|------------------|--|---|------------------|
| Practical | -Seeks answers or solutions to scientific or technological problems -Communicates in the languages used in science and technology | Labs, lab reports activities, lab exam, etc. | 40% |
| Theory | -Makes the most of his knowledge of science and technology -Communicates in the languages used in science and technology | Tests, quizzes, homework June exam, etc. | 60% |

Term breakdown

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|--------|---|---------------------------|
| Term 1 | 20% | Ends Nov. 1 st |
| Term 2 | 20% | Ends Feb. 7 th |
| Term 3 | 60% (June exam is worth 40% of this term) | Ends June 4 th |

For the Term 1 and Term 3 reports, each student will have comments regarding at least two (2) of the following four (4) cross-curricular competencies:

- Exercises critical judgment
- Organizes his work
- Communicates effectively
- Works in a team

Topics to be covered:

Course Content

| Term 1 | Term 2 | Term 3 |
|--|--|---|
| Astronomical Phenomenon <ul style="list-style-type: none">• Universal gravitation• Solar system• Light (properties)• Cycles of day and night• Phases of the moon• Eclipses• Seasons• Comets• Aurora Borealis (Northern lights)• Meteoroid Impact | General Characteristics of the Earth <ul style="list-style-type: none">• Internal structure of the Earth• Lithosphere• Types of soil• Types of rock (basic minerals)• Relief• Hydrosphere• Water (distribution)• Atmosphere• Atmospheric layers | Geological and Geophysical Phenomena <ul style="list-style-type: none">• Tectonic plate• Earthquake• Volcano• Orogenesis• Erosion• Natural energy sources• Winds• Water cycle• Renewable and non-renewable energy source |
| Scientific Method <ul style="list-style-type: none">• Introduction to the scientific method• Laboratory report writing (introduce Scientific Laboratory Report Guidelines document)• Laboratory safety | The Earth <ul style="list-style-type: none">• Geological time scale• Major stages in the history of life on Earth• Extinctions• Fossils• Stratigraphic layers | Diversity of Life Forms <ul style="list-style-type: none">• Habitat• Ecological niche• Species• Population• Physical and behavioral adaptation• Evolution• Taxonomy• Genes and chromosomes |
| Space <ul style="list-style-type: none">• Scale of the Universe• Astronomical unit• Light year• Location of the Earth in the Universe• Conditions conducive to the development of life | | Life-Sustaining Processes <ul style="list-style-type: none">• Characteristics of living things• Plant and animal cells• Photosynthesis and respiration• Cellular components visible under a microscope• Inputs and outputs (energy, nutrients, waste) |