



**Colegio
Santa María**

Mixto - Bilingüe

Science

Ma. Laura Laco

1°A & 1°B

SYLLABUS



ACHIEVEMENT AIMS

GENERAL AIMS

- To enable learners to acquire skills and encourage the development of critical thinking, referring to the scientific and technological method (observation – question – hypothesis – test – conclusion – discussion). To recognise the usefulness, and limitations, of scientific method and to appreciate its applicability in other disciplines and in everyday life.
- Demonstrate attitudes relevant to science, such as accuracy and precision, objectivity, enquiry and initiative. To become familiar with different ways to measure the variables of biological specimens; lab practice, safety and the instruments to be used, and the presentation of data recorded (tables and graphs).
- Develop abilities and skills that encourage efficient and safe practice of science.
- To develop skills that encourage effective communication through the language of science, using appropriate vocabulary, but encouraging the capacity of the students to explain the topics in their own words; to express their ideas through simple diagrams or simple schemes; and to be able to compare scientific topics seen with the reality observed.
- To enable learners to appreciate that science is subject to social, economic, technological, ethical and cultural influences and limitations; and that the applications of science may be both beneficial and detrimental to the individual, the community and the environment.



CONTENTS

UNIT 1: *Introduction to science*

PERIOD: 1 month

What is science? Branches of science. The importance of observation and asking “good” questions. The scientific method.

UNIT 2: *Scientific skills and introduction to Lab practice*

PERIOD: 2 ½ months

Lab equipment and safety in the lab. States of matter. Non-living lower levels of organisation. Learning to measure specimens: units and different systems of units. Lab practice steps and recording data; Dependent and independent variables; control variables; how to make a lab report; glossary of terms use in).

UNIT 3: *Introduction to Biology*

PERIOD: 1 month

Biology as the science of living things. Sub-sets in biological sciences; Differences between ‘alive’ or ‘not alive’. Main characteristics of living organisms (MRS GREN) and those we can use to define ‘life’.

UNIT 4: *Introduction to Cell structure and levels of organisation*

PERIOD: 1 month

Cells as ‘building blocks of life’; parts of the cell; comparison between an animal and a plant cell; the light microscope and magnification; introduction to higher levels of organisation.

UNIT 5: *Classification of living organisms. Biodiversity.*

PERIOD: 1 month

Different systems of classification. Artificial systems; Linnaeus’ binomial system. Dichotomous keys. The Whittaker Five kingdom scheme. Animal Kingdom: vertebrates and invertebrates main features and reproduction. Plant kingdom: main groups and life cycle. Evolutionary adaptations.

UNIT 6: *Ecology and Conservation.*

PERIOD: 1 ½ month

Energy flow, Food chains and food webs; Higher levels of organisation. Introduction to natural cycles: water, carbon, oxygen and nitrogen. Environmental issues and conservation.



ASSESSMENT AND EVALUATION CRITERIA

Students should:

- Conform to the school and class rules. Students will be assessed daily. Marks will be an average of academic performance and attitude as well.
- Participate in class, bring all the necessary material needed for the learning process; (complete folder with blank sheets to write, booklet, school supplies, booklet, or any other material previously requested).
- Comply with deadlines both in written and oral presentations.
- Show knowledge and application of the contents and skills listed above in different class activities and unit tests.
- Student's ability to express himself/herself accurately and fluently; and speaking in English in the classroom will be taken into account.
- Tests: written exams, unit quizzes and oral presentations.



MATERIALS

- Complete folder
- Complete booklet



BIBLIOGRAPHY

- Booklet "Science" 1st year.
- Cambridge IGCSE Biology, Mackean D.G. (2016).