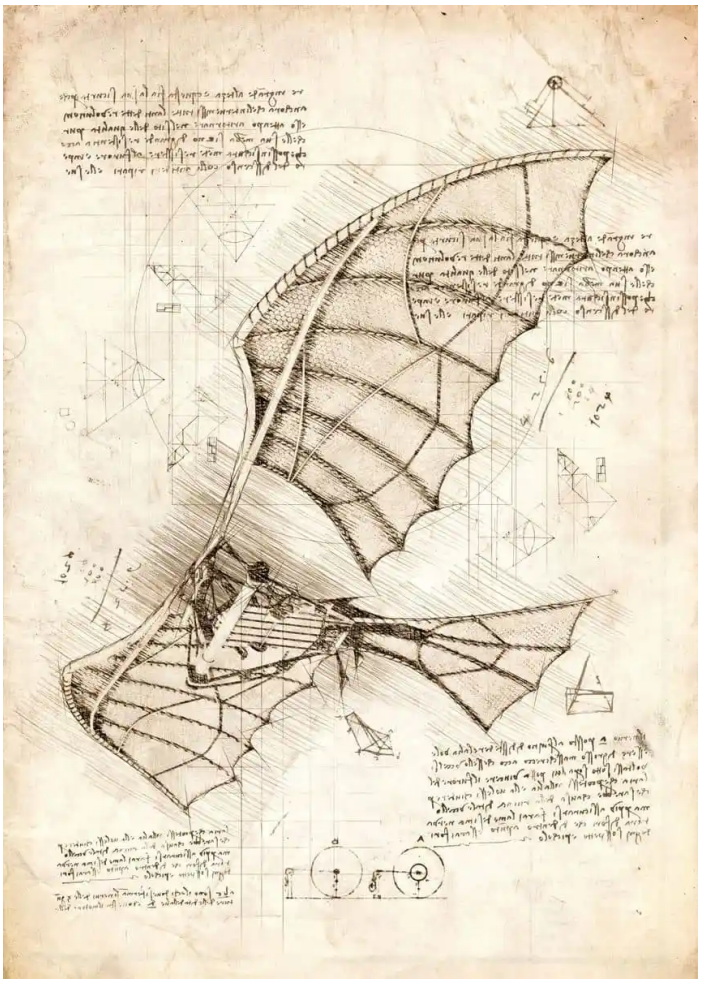
INTERNATIONAL CHRISTIAN SCHOOL

Science & Technology Department: 2026-2027

Department Chair: **Nishtha DANIEL**



"The Ornithoptor", from Leonardo da Vinci's Codex on the Flight of Birds, 1480s.

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Introduction to Science and Technology

Welcome to the Science Department at ICS. This Subject Handbook is designed to provide an overview of the Science and Technology Department's policies, procedures, and curriculum. It serves as a guide for teachers, students, and parents to ensure a cohesive and effective learning environment.

Department Vision and Mission

Vision

To inspire students to explore the wonders of the natural world and to foster a deep understanding of creation and its Creator.

Mission

To provide high-quality Science education within a Biblical worldview that equips students with the knowledge, skills, and understanding necessary to glorify God and serve Him in their academic and personal lives.

Secondary Department Faculty by Course

Middle School Courses	Grade	Teacher
Grade 6 Integrated Science	6	Clayton Silber and Trevor Jones
Grade 7 Integrated Science	7	Clayton Silber and Trevor Jones
Grade 8 Integrated Science	8	Clayton Silber and Trevor Jones

High School Courses	Grade	Teacher
Honours Biology	9-12	Claire Jung
Honours Physics	9-12	Simon McFaul and Sadoc Raju
Honours Chemistry	10-12	Sadoc Raju
Human Anatomy & Physiology[1]	10 - 12	Jack Hildreth
AP Biology[2]	10 - 12	Jack Hildreth
AP Physics 1	10 - 12	Sadoc Raju
AP Environmental Science	10 - 12	Nishtha Daniel
AP Chemistry	11 - 12	Nishtha Daniel
AP Physics C (Mechanics)	11 - 12	Simon McFaul
AP Physics C (Electricity and Magnetism)	11 - 12	Simon McFaul

ICS Teaching and Learning Philosophy

ICS Standards

ICS has a standards-based approach to education. This means we have clear and objective targets (standards) for learning in every subject, at every grade level. In the liberal arts (Math, Science and the Humanities) we emphasise the importance of knowledge, which is the basis for much of what we call 'skills'. In the creative arts (Music, Art and Drama) we emphasise the quality of both technique and interpretation. In Physical Education and Health we develop standards of physical capacity and skill.

Assessing learning of these standards is achieved by the use of proficiency rubrics, which clearly delineate a continuum from 'below standard' to 'approaching standard' to 'meeting standard' to 'exceeding standard'. Both formative and summative assessments are appropriate to the subject-specific standards.

Theology is the "Queen of the Sciences", and so the Bible has the pre-eminent place in our curriculum, training students in a Biblical worldview and understanding of the 'whole counsel of God'.

ICS Teaching & Learning Principles

- The Bible is our final authority in all matters of faith and conduct
- We use evidence-based practice founded on good cognitive science
- Optimal learning is knowledge-based and teacher-directed
- The teaching cycle: explicit instruction, modelling, practice, feedback
- The essence of a liberal arts education is deep reading, thinking, writing and discussion, in pursuit of goodness, truth and beauty, through Socratic dialogue
- We prioritise the known benefits of physical reading and handwriting

[1] Human Anatomy & Physiology is a semester-long course.

[2] Each of the AP courses couples with a compulsory semester-long lab course. For example, AP Biology will also require AP Biology Lab.

- We prepare students to operate effectively in a dual-modal society: departmental handbooks outline where digital technology is effective in enhancing learning, and our curriculum policy details education in digital literacy
- ICS partners with parents in mitigating the harms associated with screen-based childhood and learning, including our policies on homework and device-use

ICS Assessment

Formative assessment refers to a variety of methods teachers use to gather evidence about the effectiveness of their teaching and of students' academic progress over time. Formative feedback to students aims to help students understand where they are at with their learning, where it is they should be aiming for, and how to take next steps towards mastery of particular learning.

Summative assessments are assessments used to evaluate students' proficiency against ICS Standards in a particular unit, semester, or course. These assessments 'count' towards final grades on which ICS reports in Semester One and Semester Two.

Science Department Curriculum

At ICS, Science learning seeks to understand the intricate laws and breathtaking beauty of the natural world. Our curriculum is designed to ignite a sense of wonder and curiosity about the phenomena of God's creation. We empower students to use scientific inquiry to explain everyday occurrences, predict the behavior of the physical world, and analyze the causes behind the complex systems of life.

Our purpose is to provide a rigorous, high-quality education that builds essential foundations across the three pillars of natural science: Biology, Chemistry, and Physics. Students don't just learn facts; they formulate hypotheses, conduct experiments, and interpret data to solve problems.

To ensure our students are prepared for the highest levels of academic achievement, our learning standards are backward-designed from the Advanced Placement (AP) framework. This coherent path provides a seamless transition toward success in AP Biology, AP Chemistry, and AP Physics.

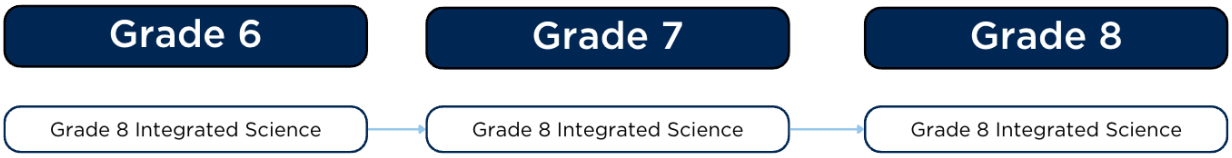
Middle School Courses	Grade
Grade 6 Integrated Science	6
Grade 7 Integrated Science	7
Grade 8 Integrated Science	8
High School Courses	**Grade**
Honours Biology	9
Honours Physics	9
Honours Chemistry	10
Human Anatomy & Physiology	10 - 12
AP Biology	10 - 12
AP Environmental Science	10 - 12
AP Physics 1	10 - 12
AP Physics 2	10 - 12
AP Chemistry	11 - 12
AP Physics C (Mechanics)	11 - 12
AP Physics C (Electricity and Magnetism)	11 - 12

Note: For more information about each course in the Science and Technology Curriculum, please read the following:

- MIDDLE SCHOOL COURSE GUIDE 2026/27
- HIGH SCHOOL COURSE GUIDE 2026/27

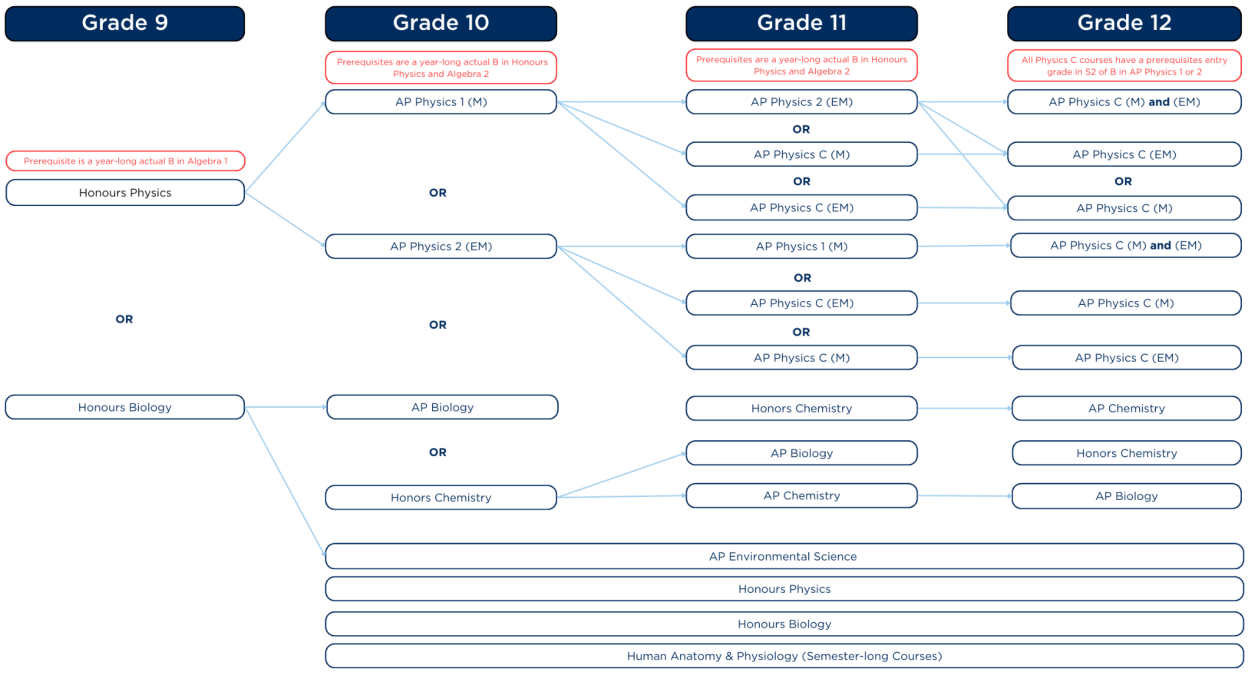
Science and Technology Course Pathways Grades 6 - 12

Middle School Course Pathways



The Foundations of Science course that used to be offered in Grade 9 is no longer available. The content of this course is now integrated into Grade 6, 7, and 8 Integrated Science. Entry in Honours Physics in Grade 9 is only for students who complete Algebra 1 in Grade 8 with a year-long B grade.

High School Course Pathways



School and Science & Technology Department Policies

General Classroom Practice

Hard-copy course textbooks are maintained in classrooms.

Students maintain Science and Technology notebooks which must be brought to every lesson.

Teachers are responsible for communicating Unit Rubrics at the beginning of every unit to students and parents; teachers will provide formative feedback on every formative assessment relevant to the Unit Rubric.