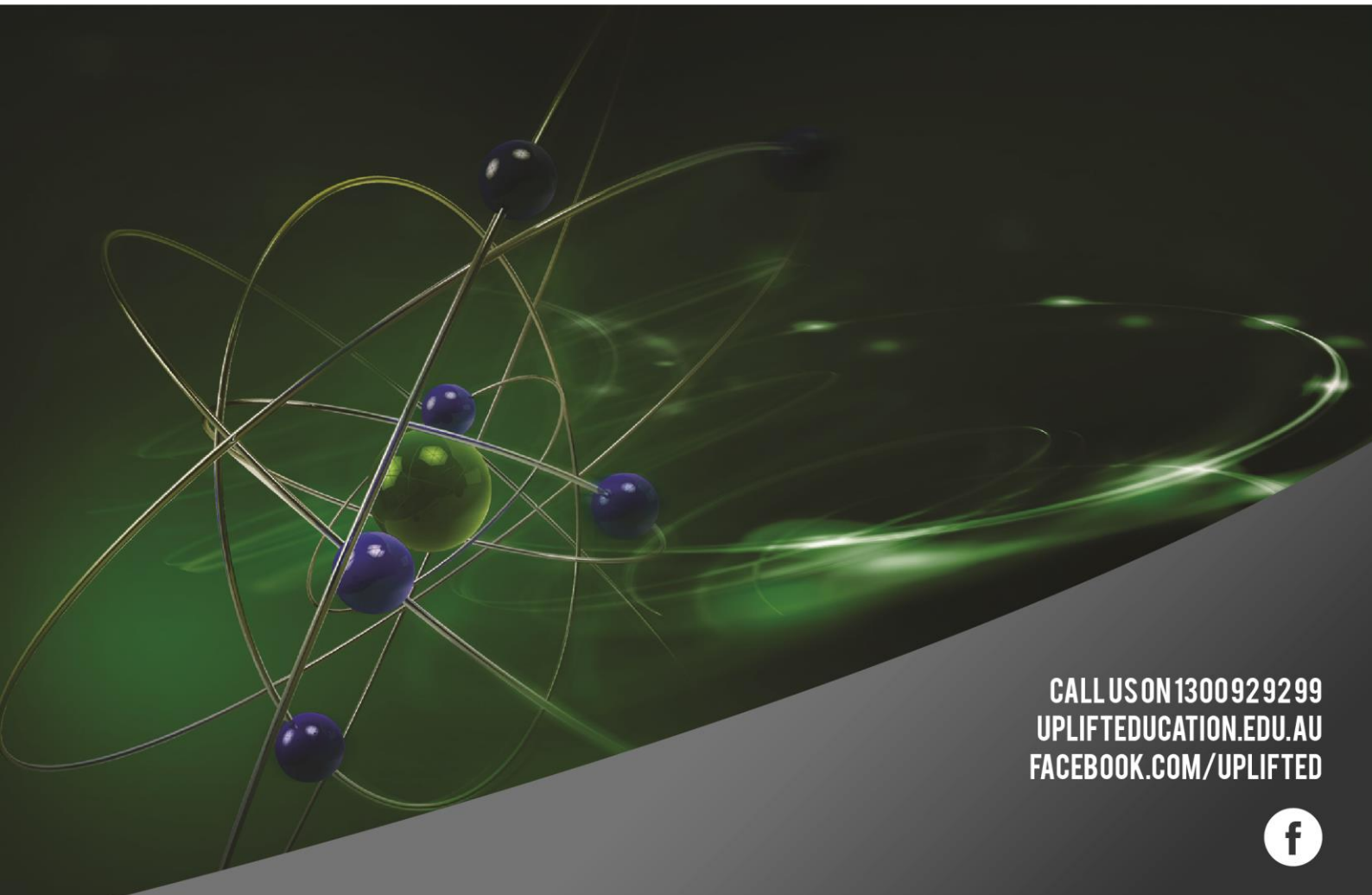
uplift education

SCIENCE

YEAR 10 SCIENCE PROGRAM



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YEAR 10: SCIENCE PROGRAM OVERVIEW

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Year Overview

Year 10 science students at Uplift Education are taught from four major modules, as outlined in the BOSTES stage five syllabus. In the classroom, we give Year 10 students the opportunity to explore scientific concepts, theories and laws beyond the requirements of the syllabus to gain a detailed understanding of the core science subjects. Towards the end of the year students will decide which areas of science they would like to study in the Preliminary and HSC course. Our course aims to explore each facet of science to allow students to develop their interest and passion and choose the senior science subjects that best showcases their capabilities.

Students will learn the importance of the scientific process by researching the origins of famous theories and applying them to modern day problems. Over the duration of the course, students will learn to observe the operation of science principles in all areas of life, from solar panels to automatic doors. They will gain an appreciation for the importance of science related professions to the development of technology and infrastructure, giving them the opportunity to consider careers paths in Science, Technology, Engineering and Mathematics. These skills will allow students to develop their conceptual understanding and analysis in ways that will benefit their performance in the HSC.

Unit Sequence

Unit 1: Physical World

This module explores the fundamental physics concepts of motion and energy. Students learn the basics of 'force' which can be derived from Newton's Laws of Motion and apply them to situations such as walking, driving vehicles and launching rockets. They will also learn about the applications of various types of energy, such as kinetic energy, potential energy and electromagnetic radiation. Students will gain an appreciation for the link between types of energy due to the Law of Conservation of Energy, which is an essential concept leading into the HSC course.

Unit 2: Earth and Space

In preparation for the senior science course where students must be able to analyse the impacts of human activity on society and the environment, the Earth and Space module explores the availability of finite resources and the consequences arising from their widespread use. In this module students will learn the origins of resources such as coal and fossil fuels, as well as developing an understanding of tectonic movement in the Earth's crust and how it affects civilization on the surface. They will also be introduced to the models and theories that have been developed to explain features of the universe, including stars, solar systems, and galaxies.

Unit 3: Living World

Students will learn about the basic building blocks of life and how they operate in unison to create complex living organisms. They will first be introduced to single-celled organisms in order to develop their understanding of the main components of a cell required for growth and development. Students will then progress to learn about the primary functions of multicellular organisms. By the conclusion of this module, students will be able to consolidate their knowledge and explain the importance of scientific understanding in conserving the quality and sustainability of ecosystems

Unit 4: Chemical World

Students will analyse the use of the Periodic Table in organizing elements by their corresponding properties and be able to recall the historical development of the Periodic Table. Students will also be introduced to chemical reactions and identify the observations that signify a chemical reaction over a physical change. This module is crucial foundation knowledge for students pursuing senior chemistry in the HSC.

Introduction to Core Sciences

In addition to the modules listed above, Year 10 science students will also be taught introductory lessons on biology, chemistry and physics. These lessons will introduce basic HSC science concepts to students gradually throughout the year so that they have an advantage over other students leading into Year 11. By exploring the three primary areas of science, Uplift Education's students will also be equipped to choose the senior science subjects that are best suited to their interests and abilities.

Student Work Portfolios and Reports

For Year 7-10 students at Uplift Education, tutors keep a folder for each student in which research and assignment work they have produced and submitted are stored. These works will be marked and assessed by the tutors and given to parents along with their semester reports. These reports are given at the end of both semesters in the school year. Tutors will assess the students' progress against a criteria sheet of learning outcomes. Parents at this time will also have the opportunity to organise a parent-teacher interview with their child's tutor.

Assessment

Students will be required to sit a module exam at the end of each unit to monitor progress and set achievable medium-term goals. Students will also be given homework research tasks throughout the semester which will be marked and placed in the Student Work Portfolios as evidence of teaching and learning. Short revision quizzes will also be given to students within their classes to monitor their understanding of the scientific concepts they have learnt.

Plagiarism and Academic Integrity

Uplift Education has a zero-tolerance plagiarism policy. In the case that plagiarism is found in a student's work, Uplift Tutors may penalise students with a reduction of marks, or in more serious cases, Uplift Education reserves the right to deny service to the student. Uplift Education defines plagiarism in the forms of:

Copying: using the same or very similar words to an original piece of work without acknowledgement or credit, or acquiring another person's academic work and copying it.

Inappropriate paraphrasing: changing words and/or phrases while retaining the original structure and/or information without acknowledgement or credit.