



Welcome to Year 10 Science at Atherton SHS. We are committed to the delivery of quality education to students and excellence in teaching and learning. Our Junior School program is shaped by the Australian Curriculum and the C2C units of Education Queensland and is adapted to suit the context of our learners in the Far North Queensland region. We welcome open communication with our teaching staff and look forward to working with you. This overview gives you a picture of the units we study, as well as the types and dates for assessment items.

SEMESTER ONE	Unit Title	Time	Unit Focus	Assessment	Due Date
	The Recipe of Life	Weeks 1- 10 Term 1 (10 weeks)	<b>Biology</b> - understand relevant terminology, such as genotype, phenotype, gene, allele, dominant, recessive, karyotype, chromosome, variation, hereditary, competition, adaptation, analogous and homologous structures, convergent and divergent evolution, and geographical distribution, use models and diagrams to represent the relationship between DNA, genes and chromosomes, recognise that genetic information passed on to offspring through sexual reproduction is from both parents by meiosis and fertilisation, describe mutations as changes in DNA or chromosomes and outline the factors that contribute to causing mutations, explore the use of DNA and genetic research in the study of Aboriginal and Torres Strait Islander origins, investigate the applications of gene technologies such as gene therapy and genetic engineering, consider the use of genetic testing for decisions such as genetic counselling, embryo selection and insurance, relate genetic characteristics to survival and reproductive rates, investigate changes caused by natural selection in a particular population as a result of a specified selection pressure and investigate common misconceptions of evolution, (for example natural selection leads to perfect adaptation).	Research Investigation	Week beginning Week 9 Term 1
	Chemical Reactions Matter	Weeks 1-11 Term 2 (11 weeks)	<b>Chemistry</b> – research of the periodic table and its development and refinement over time, recognising that elements in the same group of the periodic table have similar properties, understanding that atomic structure explains the position of elements in the periodic table, relating electronic configuration to the formation of compounds, investigating chemical reactions and representing them using word and balanced symbol equations, planning safe and fair methods to investigate the factors that affect the rate of chemical reactions, exploring how rates of everyday chemical processes are increased or decreased, exploring a variety of chemical processes and techniques used to identify and produce materials, investigating the extraction of useful substances such as fuels and metals (for example extracting a metal from its ore), investigating the production of new substances such as pharmaceuticals, exploring current, and predicting future, applications of nanotechnology in people’s lives (for example zinc in sunscreen),	Student experiment  Semester Exam – (Biology and Chemistry)	Week 5  Week beginning Week 10 Term 2

		exploring environmental issues and impacts in which chemical science plays a role, (for example in the development of environmentally sustainable chemical processes).		
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SEMESTER TWO	Unit Title	Time	Unit Focus	Assessment	Due Date
	<b>Foundations of Forces, Motion and Energy</b>	Weeks 1 - 10 Term 3 (10 weeks)	<b>Physics</b> – the mathematical and experimental foundations of our understanding of forces, motion and energy, considering the historical and cultural development of science and how scientific theories can change or be overthrown over time, demonstrating the importance of mathematics and precise measurement in physics, gathering of data (such as measurements of distance and time, speed, force, mass and acceleration) to analyse motion, using appropriate technology, representing motion graphically, interpreting graphs of motion, using Newton’s laws to describe and explain the motion of objects, using mathematical equations to solve problems related to the motion of objects, recognising that the Law of Conservation of Energy explains that total energy is maintained in energy transfer and transformation and using models to describe how energy is transferred and transformed within systems	<b>Data Test</b>	Week Beginning Week 9 Term 3
	<b>Space and Earth Science</b>	Weeks 1 - 8 Term 4 (8 weeks)	<b>Astronomy</b> - star brightness and magnitude, small angle formula, wave formula, spectroscopy, life cycle of stars, cosmology, big bang theory (the evidence that supports the Big Bang theory and calculation of the age of the universe), explain describe the evolution of the universe, including the formation of galaxies and stars, origins of life (the theory of evolution and the role of Darwin in its development, modern cosmology and the role of scientists (such as Hubble, Hawking and Hoyle) in its development and applied mathematical skills <b>Global Systems</b> - Earth is composed of four interacting and dynamic 'spheres', within which the global systems and cycles operate: the lithosphere, hydrosphere, atmosphere and biosphere, consider how matter cycles within and between these spheres, such as in the carbon cycle and the water cycle, consider the role of the biosphere in carbon storage	<b>Semester Exam – (Physics &amp; Earth Science)</b>	Week beginning Week 7 Term 4

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We encourage all students to have a display folder to file their handouts and resources. This can be very helpful when it comes to reviewing the work done in class, preparing for tests and completing assignments. Weekly tutoring is also available.

Please do not hesitate to contact your child's classroom teacher if you have any questions. We welcome open communication with our parents and caregivers.