



Welcome to Year 9 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                       |
|--------------|---|-------------------------------------|---|---|--------------------------------|
|              | <b>Energy on the Move and Making Waves</b>      | Weeks 1- 10<br>Term 1<br>(10 weeks) | <b>Physics</b> – energy transfer through different mediums using the particle model, designing investigation questions and collecting quantitative and qualitative data and information on the flow of heat and electrical energy, using these findings, scientific knowledge and prior understanding to form conclusions, evaluating explanations and claims using scientific knowledge, assessing energy efficiencies in house design and the use of electrical appliances for heating and cooling to make informed decisions about the influence of science and technology on energy use, the wave-based models of energy transfer related to sound and light, investigating wave motion and how different mediums affect sound and light transfer, exploring ways in which humans have used and controlled sound and light energy transfer for practical purposes and exploring the structure and use of musical instruments by Aboriginal peoples and Torres Strait Islander peoples.  | <b>Exam</b>                             | Week 9<br>Term 1               |
|              | <b>It's Elementary &amp; The Changing Earth</b> | Weeks 1-10<br>Term 2<br>(10 weeks)  | <b>Earth Sciences</b> – the historical development of the theory of plate tectonics, modelling and investigating geological processes involved in Earth movement, comparison of different types of tectonic-plate boundaries and the tectonic events which occur at these boundaries, exploring technological developments that have aided scientists in the study of tectonic-plate movement and considering how these assist societies living in tectonic-event areas, the impact of tectonic events such as earthquakes, tsunamis and volcanoes on humans and describing where science and technology are contributing to the development of safer buildings.<br><b>Chemistry</b> - the development of scientific ideas about atoms and their subatomic particles, protons, neutrons and electrons, the structure and uses of isotopes and the processes and products of radioactive decay including radiation and half-life, understanding the changes made in scientific ideas about the structure of atoms and isotopes as new evidence has become available, researching the use of radioisotopes in a range of areas of | <b>Research Task</b><br><br><b>Exam</b> | Week 4<br><br>Week 9<br>Term 2 |

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|  |  | society and considering the impacts of these uses on society (including the technology and occupations resulting from these uses). |  |  |
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| SEMESTER TWO   | Unit Title                           | Time   | Unit Focus           | Assessment       | Due Date   |
|--|--------------------------------------|--|----------------------|------------------|--|
| <b>My Life in Balance &amp; Responding to Change</b> | Weeks 1 - 10<br>Term 3<br>(10 weeks) | <p><b>Biology [Human Body Systems]</b> – human body systems and the ways in which they work together in balance to support life, the functions of the systems and how they are coordinated to provide the essential requirements for life, analysing and predicting the effects of the environment on body systems, discussing how the body responds to changes in the environment and to diseases, researching the positive and negative aspects of vaccination and using evidence to justify decisions related to vaccination.</p> <p><b>Change in Ecosystems</b> – exploring the concepts of change within an ecosystem, analysing how biological systems function and maintain balance, exploring how different ecosystems respond to external changes and examine the impacts on populations, the interrelationships occurring within and the flow of matter and energy through an ecosystem and investigating how an ecosystem responded to an extreme event.</p>  | Investigative report | Week 9<br>Term 3 |  |
|  |                                      |  |                      |                  | <p><b>Chemistry</b> – exploration of chemical reactions and the application of these in living and non-living systems, understanding that chemical change involves the rearranging of atoms to form new substances, examining energy transfer in reactions, the nature and reactions of acids as well as the conservation of mass in chemical reactions, investigating the use of chemistry (for example, to measure the pH of soils, replication ocean acidification, examining the chemical reactions used in instant cold packs), evaluating claims related to environmental issues and considering how the application of chemistry affects people's lives.</p> <p><b>Everyday Applications of Chemistry</b> – examining a series of chemical reactions used in food production including fermentation, detoxification, gelation and denaturation, exploring the reliability of acid/base indicators made from natural plant pigments and investigating how chemical reactions involving energy transfer can be applied in food preparation.</p> |
| <b>Chemical Patterns &amp; Heat and Eat</b>          | Weeks 1 - 10<br>Term 4<br>(10 weeks) | <p><b>Chemistry</b> – exploration of chemical reactions and the application of these in living and non-living systems, understanding that chemical change involves the rearranging of atoms to form new substances, examining energy transfer in reactions, the nature and reactions of acids as well as the conservation of mass in chemical reactions, investigating the use of chemistry (for example, to measure the pH of soils, replication ocean acidification, examining the chemical reactions used in instant cold packs), evaluating claims related to environmental issues and considering how the application of chemistry affects people's lives.</p> <p><b>Everyday Applications of Chemistry</b> – examining a series of chemical reactions used in food production including fermentation, detoxification, gelation and denaturation, exploring the reliability of acid/base indicators made from natural plant pigments and investigating how chemical reactions involving energy transfer can be applied in food preparation.</p> | Exam                 | Week 9<br>Term 4 |  |

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.