Lanyon High School

Year 10 — Australian Curriculum: Science

Identify curriculum	**Achievement standard**	By the end of Year 10 students explain the processes that underpin heredity and genetic diversity and describe the evidence supporting the theory of evolution by natural selection. They sequence key events in the origin and evolution of the universe and describe the supporting evidence for the big bang theory. They describe trends in patterns of global climate change and identify causal factors. They explain how Newton's laws describe motion and apply them to predict motion of objects in a system. They explain patterns and trends in the periodic table and predict the products of reactions and the effect of changing reactant and reaction conditions. Students analyse the importance of publication and peer review in the development of scientific knowledge and analyse the relationship between science, technologies and engineering. They analyse the key factors that influence interactions between science and society. Students plan and conduct safe, valid and reproducible investigations to test relationships or develop explanatory models. They explain how they have addressed any ethical and intercultural considerations when generating or using primary and secondary data. They select equipment and use it efficiently to generate and record appropriate sample sizes and replicable data with precision. They select and construct effective representations to organise, process and summarise data and information. They analyse and connect a variety of data and information to identify and explain patterns, trends, relationships and anomalies. They evaluate the validity and reproducibility of methods, and the validity of conclusions and claims. They construct logical arguments based on analysis of a variety of evidence to support conclusions and evaluate claims. They select and use content, language and text features effectively to achieve their purpose when communicating their ideas, findings and arguments to diverse audiences.
Teaching and learning	**Semester overview**	**Semester 1**

CHEMISTRY
During this term, students will explain patterns and trends in the periodic table. They will gain an understanding of common types of reactions and predict their products. Students investigate how different factors can influence the rate of the reactions.

Science Inquiry Skills
- They select equipment and use it efficiently to generate and record appropriate sample sizes and replicable data with precision
- They select and construct effective representations to organise, process and summarise data and information.

PHYSICS
During this term, students will determine what energy conservation is and use that knowledge to represent energy transfer and transformation within different systems. They will also apply their understanding of the relationship between force, mass and acceleration to predict changes in motion of objects.

Science Inquiry Skills
- Students plan and conduct safe, valid and reproducible investigations to test relationships or develop explanatory models
- They select equipment and use it efficiently to generate and record appropriate sample sizes and replicable data with precision
- They select and construct effective representations to organise, process and summarise data and information.
- They analyse and connect a variety of data and information to identify and explain patterns, trends, relationships and anomalies.

Semester 2

EARTH AND SPACE SCIENCES
During this term students will explore and evaluate the evidence for scientific theories that are based on the origins of the universe. Students will also describe and analyse the interactions and cycles that occur within the Earth's spheres.

Science Inquiry Skills
- They explain how they have addressed any ethical and intercultural considerations when generating or using primary and secondary data
- They evaluate the validity and reproducibility of methods, and the validity of conclusions and claims.
- They construct logical arguments based on analysis of a variety of evidence to support conclusions and evaluate claims

Science as a Human Endeavour
- Analyse and discuss the importance of peer review and publication to further scientific thought
- They analyse the key factors that influence interactions between science and society.

BIOLOGY
During this term, students will investigate the theory of evolution and use that understanding to help explain the processes that underpin the theories of heredity and evolution.

Science Inquiry Skills
- Construct evidence-based arguments and select appropriate representations and text types to communicate science ideas for specific purposes.
- Evaluate the validity and reliability of claims made in secondary sources with reference to currently held scientific views, the quality of the methodology and the evidence cited.
- They select and use content, language and text features effectively to achieve their purpose when communicating their ideas, findings and arguments to diverse audiences.

Science as a Human Endeavour
- Analyse and discuss the importance of peer review and publication to further scientific thought

	General capabilities and Cross curriculum priorities	
	Key to general capabilities and cross-curriculum priorities	Literacy · Numeracy · ICT capability · Critical and creative thinking · Ethical behaviour · Personal and social capability · Intercultural understanding · Aboriginal and Torres Strait Islander histories and cultures · Asia and Australia's engagement with Asia · Sustainability

Develop assessment	**Assessment**	**Semester 1**		**Semester 2**	
		Week	**Assessment instrument**	**Week**	**Assessment instrument**

		4-5	Atomic structure assessment	5-6	Earth Science investigation
		8-9	Rates of reaction investigation	9-10	Cosmology task
		14-15	Physics investigation	12-13	Evolution task
		Ongoing	Physics classwork	16-17	Genetics presentation
Make judgments and use feedback	**Moderation**	**Semester 1**		**Semester 2**	
		Teachers moderate assessment tasks to ensure consistency of judgments.			