

Year Level: 10

Subject: Science 1001

Week	Unit	Learning focus	Victorian Curriculum
1	Biology	<ul style="list-style-type: none">• using models and diagrams to represent the relationship between DNA, genes and chromosomes• describing mutations as changes in DNA or chromosomes and outlining the factors that contribute to causing mutations	The transmission of heritable characteristics from one generation to the next involves DNA and genes (VCSSU119)
2			
3-4		<ul style="list-style-type: none">• recognising that genetic information passed on to offspring is from both parents and involves the processes of fertilisation and meiosis• representing patterns of inheritance of a simple dominant/recessive characteristic through generations of a family	
5			
6	Chemistry	<ul style="list-style-type: none">• describing and modelling the structure of atoms in terms of the nucleus, protons, neutrons and electrons• comparing the mass and charge of protons, neutrons and electrons• describing in simple terms how alpha and beta particles and gamma radiation are released from unstable atoms	All matter is made of atoms which are composed of protons, neutrons and electrons; natural radioactivity arises from the decay of nuclei in atoms (VCSSU122)
7		<ul style="list-style-type: none">• describing the structure of atoms in terms of electron shells• explaining how the electronic structure of an atom determines its position in the periodic table and its properties• investigating the chemical activity of metals	The atomic structure and properties of elements are used to organise them in the periodic table (VCSSU123)
8		<ul style="list-style-type: none">• modelling chemical reactions in terms of rearrangement of atoms• considering the role of energy in chemical reactions• recognising that the conservation of mass in a chemical reaction can be demonstrated by simple chemical equations	

9		<ul style="list-style-type: none"> investigating the effect of a range of factors, for example, temperature and catalysts, on the rate of chemical reactions using word or symbol equations to represent chemical reactions 	
Term 2 Week 1	Physics	<ul style="list-style-type: none"> recognising that a stationary object, or a moving object with constant motion, has balanced forces acting on it 	The description and explanation of the motion of objects involves the interaction of forces and the exchange of energy and can be described and predicted using the laws of physics (VCSSU133)
2-3		<ul style="list-style-type: none"> gathering data to analyse everyday motion produced by forces, for example, measurements of distance and time, velocity, mass, acceleration and force 	
4-5		<ul style="list-style-type: none"> investigating the effects of applying different forces, including Earth's gravitational force, to familiar objects 	
6	Scientific Investigations	<ul style="list-style-type: none"> formulating questions that can be investigated within the scope of the classroom or field with available resources developing ideas from students' own or others' investigations and experiences to investigate further revising and refining research questions to target specific information and data collection or finding a solution to the specific problem identified 	Formulate questions or hypotheses that can be investigated scientifically, including identification of independent, dependent and controlled variables (VCSIS134)
7		<ul style="list-style-type: none"> explaining the choice of variables to be controlled, changed and measured in an investigation identifying and managing potential hazards of chemicals or biological materials used in experimental investigations or fieldwork deciding how much data are needed to obtain reliable measurements using modelling and simulations, including using digital technologies, to investigate situations and events using the internet to facilitate collaboration in joint projects and discussions 	Independently plan, select and use appropriate investigation types, including fieldwork and laboratory experimentation, to collect reliable data, assess risk and address ethical issues associated with these investigation types (VCSIS135)
8		<ul style="list-style-type: none"> applying specific skills in the use of scientific instruments selecting and using probes and data loggers to record information identifying how human error can influence the reliability of data 	

9		<ul style="list-style-type: none"> • using spreadsheets to present data in tables and graphical forms and to carry out mathematical analyses of data • designing and constructing appropriate graphs to represent data and to look for trends and patterns 	
10		<ul style="list-style-type: none"> • exploring relationships between variables using spreadsheets, databases, tables, charts, graphs and statistics • describing data properties (for example mean, median, range, outliers, large gaps visible on a graph) and their significance for a particular investigation sample, acknowledging uncertainties 	
		<ul style="list-style-type: none"> • discussing what is meant by 'validity' and how we can evaluate the validity of information in secondary sources • judging the validity of science-related media reports and how these reports might be interpreted by the public • using primary or secondary scientific evidence to support or refute a conclusion or claim • suggesting more than one possible explanation of the data presented 	
		<ul style="list-style-type: none"> • using secondary sources as well as students' own findings to help explain a scientific concept • using a range of representations, including mathematical and symbolic forms, to communicate science ideas • presenting results and ideas using formal experimental reports, oral presentations, multimodal presentations, poster presentations and contributing to group discussions 	