

Year Level: 10      Subject: Science			
Semester: 2			
Week	Unit	Learning focus	Science Understanding
1	<a href="#">Evolution</a>	<ul style="list-style-type: none"> <li>Discover and describe how Darwin and Wallace both managed to come to similar conclusions on evolution.</li> </ul>	<ul style="list-style-type: none"> <li>The theory of evolution by natural selection explains the diversity of living things and is supported by a range of scientific evidence VCSSU120</li> </ul>
2		<ul style="list-style-type: none"> <li>Explain how natural selection is the mechanism of evolution</li> <li>Describe how different selection pressures cause divergence, and similar selection pressures cause convergence.</li> </ul>	
3-4		<ul style="list-style-type: none"> <li>Explain how fossil records provide evidence for evolution. Explore other forms of evidence that support evolution.</li> </ul>	
5		<ul style="list-style-type: none"> <li>Investigate how DNA and proteins provide chemical evidence for evolution.</li> <li>Describe how humans artificially select traits</li> <li>Describe how natural selection affects the frequency of alleles</li> </ul>	
6		<a href="#">Chemistry</a>	
7	<ul style="list-style-type: none"> <li>Explain the properties of acid reactions</li> <li>Remember and apply solubility rules to predict the formation of precipitates.</li> <li>Describe what happens in a combustion reaction</li> </ul>		
8	<ul style="list-style-type: none"> <li>Investigate the properties of polymers and monomers</li> <li>Explain the factors that affect the rate of reaction (temperature, concentration, surface area and stirring).</li> </ul>		

9		<ul style="list-style-type: none"> <li>Describe the importance of catalysts to increase the rate of reaction.</li> <li>Explore how chemistry is being used to help the environment</li> </ul>	
Term 4			
Week	Unit	Learning focus	Science Understanding
1	<a href="#">Physics</a>	<ul style="list-style-type: none"> <li>identify some stars and constellations in the night sky</li> <li>describe the work of some modern-day Australian astronomers.</li> </ul>	The Universe contains features including galaxies, stars and solar systems; the Big Bang theory can be used to explain the origin of the Universe ( <a href="#">VCSSU129</a> )
2-3		<ul style="list-style-type: none"> <li>explain the process of nuclear fusion in stars</li> <li>relate the surface temperature of a star to its absolute magnitude</li> <li>describe the difference between relative magnitude, absolute magnitude and luminosity</li> <li>convert distances in light years to kilometres</li> <li>explain how stellar parallax can be used to calculate the distances to nearby stars</li> <li>describe the structure of the universe in terms of stars and galaxies.</li> <li>using familiar examples, describe how the Doppler effect changes the apparent frequency and wavelength of sound waves</li> </ul>	
4-5		<ul style="list-style-type: none"> <li>explain how absorption and emission spectra are produced by stars and nebulae and how these spectral patterns indicate which elements are present</li> <li>explain how Hubble's law provides evidence for the Big Bang theory.</li> <li>relate the amount of red shift of a galaxy to its speed and distance from Earth</li> <li>understand that evidence for the Big Bang theory has also been used to estimate the age of the universe.</li> <li>identify some possible benefits of the Square Kilometre Array to furthering our understanding of the cosmos</li> </ul>	

6	<a href="#">Global Systems</a>	<ul style="list-style-type: none"> <li>• identify the differences between the lithosphere, atmosphere, hydrosphere and biosphere</li> <li>• explain how each sphere interacts with each other.</li> </ul>	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"> <li>• explain how matter moves through the following cycles: <ul style="list-style-type: none"> <li>–oxygen</li> <li>–nitrogen</li> <li>–phosphorous</li> </ul> </li> <li>• explain the key participants in the three cycles and how they are able to cycle the matter.</li> </ul>	
8		<ul style="list-style-type: none"> <li>• explain the three states of matter and how they are formed</li> <li>• explain how water cycles through these three states of matter based on the temperature of the globe</li> <li>• explain how various weather patterns are created by the cycling of air around the globe based on global temperatures</li> <li>• describe the Coriolis effect</li> <li>• read weather maps to determine weather patterns.</li> </ul>	
9		<ul style="list-style-type: none"> <li>• explain how matter moves through the carbon cycle</li> <li>• explain the key participants in the carbon cycle and how they are able to cycle carbon</li> <li>• apply the carbon cycle to explain a carbon sink</li> <li>• identify and describe the impact that humans have on the carbon cycle.</li> </ul>	
10		<ul style="list-style-type: none"> <li>• explain the trend in increased temperature over time</li> <li>• define the greenhouse effect and the gases that cause it</li> <li>• explain why greenhouse gas concentrations in the atmosphere are rising</li> <li>• explain the various impacts of an increase in the concentration of greenhouse gases.</li> </ul>	

		<ul style="list-style-type: none"><li>• describe the effects that small increases in global temperatures have on<ul style="list-style-type: none"><li>–extreme weather events</li><li>–health and disease</li><li>–loss of biodiversity</li><li>–deep ocean currents and climate control.</li></ul></li></ul>	
11		<ul style="list-style-type: none"><li>• recognise the importance of the Kyoto Protocol and explain why it was implemented</li><li>• explain the various political and governmental policies which have been put in place to encourage large companies to reduce their greenhouse emissions</li><li>• explain how greenhouse emissions can be reduced by humans.</li></ul>	