

Year 9 Science progress grid

Year 9 science	Greater than expected progress. Students will be able to know / understand / do:		Expected progress Students will be able to know / understand / do:		Less than expected progress Students will be able to know / understand / do:	
	Mid-year	End of year	Mid-year	End of year	Mid-year	End of Year
Extended learner	<p>Explain in detail life process of eukaryotic and prokaryotic cells, explaining cell organelles and functions. Accurately use SI to manipulate formulas calculate size and scale when using microscopes</p> <p>Explain organisational hierarchy, the principles of organisation, human digestive system and its enzymes, the heart and blood vessels, related health issues, the effects of lifestyle and cancer</p> <p>Explain in detail anaerobic and aerobic respiration, response to exercise and metabolism</p> <p>Explain in detail photosynthesis, its rate of reaction and the uses of glucose it produces</p> <p>Describe in detail atomic structure in detail, explain the reactions of elements/mixtures and their properties and periodic trends.</p>	<p>Describe and explain in detail the evolution of the Earth's atmosphere. Explain the role of carbon dioxide and methane as greenhouse gases, and common atmospheric pollutants and their sources.</p> <p>Explain in detail how Earths resources are obtained and used. Describe in detail methods used to obtain potable water, lifecycle assessment and recycling. Explain how this leads to sustainable development.</p> <p>Explain in detail how energy is conserved in chemical reactions, calculating bond energies and energy changes. Explain in detail energy profiles accounting for energy changes during exothermic and endothermic reactions.</p> <p>Explain in detail energy changes in a system, the ways energy is stored before and after such changes, conservation and dissipation of energy and national and global energy resources.</p> <p>Explain in detail current and resistance, series and parallel circuits, domestic uses and safety and energy transfers.</p> <p>Explain in detail waves motion in air, solids and properties of electromagnetic waves.</p>	<p>Explain life process of eukaryotic and prokaryotic cells, explaining cell organelles and functions. Use SI units to manipulate formulas calculate size and scale when using microscopes</p> <p>Explain the principles of organisation, human digestive system and its enzymes, the heart and blood vessels, related health issues, the effects of lifestyle and cancer</p> <p>Explain anaerobic and aerobic respiration, response to exercise and metabolism</p> <p>Explain photosynthesis, its rate of reaction and the uses of glucose it produces</p> <p>Describe atomic structure, explaining the reactions of elements/mixtures and their properties and periodic trends.</p>	<p>Describe and explain the evolution of the Earth's atmosphere. Explain the role of carbon dioxide and methane as greenhouse gases, and common atmospheric pollutants and their sources.</p> <p>Explain how Earths resources are obtained and used. Describe methods used to obtain potable water, lifecycle assessment and recycling. 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Use microscopes and describe simple method</p> <p>Know organisational hierarchy, the principles of organisation, human digestive system and its enzymes, the heart and blood vessels, related health issues, the effects of lifestyle and cancer</p> <p>Identify reactants and products of anaerobic and aerobic respiration, simply describe response to exercise. Identify reactants and products of metabolism</p> <p>Identify reactants and products of photosynthesis, and factors which affect the rate of reaction. State the uses of glucose it produces</p> <p>Know atomic structure, identify elements/mixtures and some properties and periodic trends.</p>	<p>Know that the Earth's atmosphere has not always been the same. State Name some greenhouse gases, and common atmospheric pollutants. State the sources.</p> <p>Name Earths resources. State what potable water is, state what a lifecycle assessment is and know about recycling methods. State what sustainable development is.</p> <p>State that energy is conserved in chemical reactions. Identify energy profiles accounting for energy changes during exothermic and endothermic reactions.</p> <p>Identify energy transfers in a system, the ways energy is stored before and after such changes, conservation and dissipation of energy.</p> <p>State the meaning of current and resistance, series and parallel circuits. Identify domestic uses and safety.</p> <p>Describe motion of different waves in air, solids and describe some properties of electromagnetic waves.</p>
Emerging learner	<p>Identify eukaryotic and prokaryotic cells. know cell organelles and functions. calculate size and scale when using microscopes</p> <p>Know organisational hierarchy, the principles of organisation, human digestive system and</p>	<p>Know that the Earth's atmosphere has not always been the same. State that carbon dioxide and methane are greenhouse gases, and common atmospheric pollutants. State the sources.</p>	<p>Identify eukaryotic and prokaryotic cells. know cell organelles and functions. Use microscopes and describe simple method</p> <p>Know organisational hierarchy, the principles of organisation, human digestive system and its</p>	<p>Know that the Earth's atmosphere has not always been the same. State Name some greenhouse gases, and common atmospheric pollutants. State the sources.</p>	<p>Identify eukaryotic and prokaryotic cells. know cell organelles and functions. Use microscopes, write method with help.</p> <p>Identify organs human digestive system and its enzymes, the heart and blood vessels, related health issues, the effects of lifestyle and cancer</p>	<p>Know that the Earth's atmosphere has not always been the same. State Name some greenhouse gases, and common atmospheric pollutants. State the sources.</p>

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