





TERM 1


	Theme	Overview of key learning to take place	How learning will be assessed
	<p><u>Topic:1</u></p> <p>9A – Genetics and evolution</p>	<p>I can explain how environmental variations can cause problems with classification.</p> <p>I can explain how sexual reproduction leads to inherited variation.</p> <p>I can explain what probability is.</p> <p>I can calculate probability and display them in different forms.</p> <p>I can outline how structure of DNA was discovered.</p> <p>I can describe relationship between chromosomes, DNA, genes, genetic information and nuclei.</p> <p>I can explain how organisms become endangered or extinct.</p> <p>I can explain how animals get adapted to the environment.</p> <p>I can explain ways of preserving biodiversity.</p> <p>I can recall that individuals in a population vary genetically.</p> <p>I can explain how natural selection works on the variations.</p>	<p>Formative Assessment to be used this term:</p> <ul style="list-style-type: none"> • In class peer and self-assessment of extended answer questions • End of topic questions-exam style worksheets 
	<p><u>Topic:2</u></p> <p>9D – Biology STEM Project</p>	<p>I can draw out a plan for scientific writing.</p> <p>I can explain my thoughts, findings and research work through scientific writing.</p> <p>I can use references in my scientific writing.</p> <p>I can write a scientific report on the using the given information.</p>	



	<p><u>Topic:3</u></p> <p>9I – Forces and Motion</p>	<p>I can recall names of different forces.</p> <p>I can explain effects of balanced and unbalanced forces.</p> <p>I can explain why moving objects have a top speed.</p> <p>I can recall ways in which energy can be stored and transferred.</p> <p>I can recall laws of energy conservation.</p> <p>I can state the meaning of efficiency.</p> <p>I can describe the meaning of speed and mean speed.</p> <p>I can use the formula relating to speed, distance and time</p> <p>I can represent simple journeys on a distance-time graph.</p> <p>I can draw and interpret distance-time graph.</p> <p>I can calculate the gradient of a line graph.</p> <p>I can draw and interpret speed-time graph.</p> <p>I can describe how a simple lever can multiply forces or distances.</p> <p>I can identify load, effort and pivot on a diagram of a lever.</p> <p>I can describe the factors that affect the size of a moment.</p> <p>I can describe how simple machines can magnify forces.</p>	<div data-bbox="1912 655 2040 762" data-label="Image"> </div> <p>Summative assessment</p> <p>Mid-term assessment: after first 2 topics of the term.</p>
		<p>I can name some ceramics and their uses.</p> <p>I can explain why certain ceramics have particular uses.</p>	<p>End of term assessment: after next 2 topics of the term.</p>

	<p><u>Topic 4</u></p> <p>9E – Making Materials</p>	<p>I can explain how the properties of ceramics depend on their structure.</p> <p>I can name some examples and uses of polymers.</p> <p>I can explain some properties of ceramics.</p> <p>I can describe how polymers are made.</p> <p>I can describe advantages and disadvantages of peer review.</p> <p>I can explain composite materials, giving examples.</p> <p>I can explain what happens in thermal decomposition, and exothermic and endothermic reactions.</p> <p>I can explain how making and using materials can cause problems.</p> <p>I can explain advantages of recycling.</p>	
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TERM 2


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	<p><u>Topic 5</u></p> <p>9B – Plant Growth</p>	<p>I can explain what happens when plants photosynthesise and respire.</p> <p>I can explain how rate of photosynthesis can be affected. I can describe how leaves, roots and stems are adapted for their functions.</p> <p>I can explain how substances enter and leave the plants.</p> <p>I can explain how and what plants make different substances.</p> <p>I can describe how pests and human population alter the food supply.</p> <p>I can explain ways in which farmers boost food production.</p>	



		<p>I can sue models for example food webs and carbon cycle to explain changes in an ecosystem.</p> <p>I can identify bias.</p> <p>I can explain whether something is valid.</p>	<p>Formative Assessment to be used this term:</p> <ul style="list-style-type: none"> • In class peer and self-assessment of extended answer questions • End of topic questions-exam style worksheets
	<p><u>Topic 6</u></p> <p>9F – Reactivity</p>	<p>I can state hazards associated with demolition.</p> <p>I can identify and explain the differences between physical changes and chemical reactions.</p> <p>I can use particle theory to explain gas pressure and how it can be changed.</p> <p>I can describe the reactions of metals with water and dilute acids and air.</p> <p>I can describe structure of an atom.</p> <p>I can describe the test for oxygen</p> <p>I can explain how combustion process can be speeded up.</p> <p>I can explain why some reactions need a supply of energy.</p> <p>I can express a number as a percentage of another.</p> <p>I can calculate percentage.</p> <p>I can explain what happens in a displacement reaction.</p> <p>I can predict whether a displacement reaction will occur.</p> <p>I can explain why the method used to extract a metal is related to cost and the metal's reactivity.</p>	


	<p><u>Topic 7</u> 9L – Physics STEM Project</p>	<p>I can explain the importance of a confident speaker in a presentation.</p> <p>I can distribute duties among the group members for a project work.</p> <p>I can collect information to answer a question.</p> <p>I can create a scientific writing piece for an online newspaper.</p> <p>I can present my results/findings to reach a conclusion.</p> <p>I can evaluate the information or data collected.</p> <p>I can create a scientific writing script for an advertisement.</p>	
	<p><u>Topic 8</u> 9G – Transition to further study - Chemistry</p>	<p>I can identify reaction.</p> <p>I can identify the elements in a chemical formula of a compound.</p> <p>I can explain how two ions are formed.</p> <p>I can describe metallic and ionic bonding.</p> <p>I can explain how metals and ionic compounds can conduct electricity.</p> <p>I can describe ways to modify weather.</p> <p>I can discuss the advantages and disadvantages of controlling or modifying weather.</p> <p>I can interpret and sketch reaction profiles</p> <p>I can explain why changes are described as being exothermic or endothermic.</p> <p>I can describe how rates of reactions change.</p> <p>I can write a balanced symbol equations with state symbols.</p> <p>I can recognise and use numbers and units with indices.</p>	 <p>Summative assessment</p> <p>Mid-term assessment: after first 2 topics of the term.</p> <p>End of term assessment: after next 2 topics of the term.</p>

	<p>I can convert numbers to and from standard form.</p> <p>I can represent reversible reactions using balanced symbol equations.</p> <p>I can explain how a dynamic equilibrium is formed in reversible reactions.</p>	
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TERM 3

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	<p style="text-align: center;"><u>Topic 9</u></p> <p style="text-align: center;">9K – Transition to further study – Physics</p>	<p>I can decide scientific questions for an investigation.</p> <p>I can describe how temperature differences can cause convection currents.</p> <p>I can state the meanings of latent heat and specific heat.</p> <p>I can use the formula for a gravitational potential energy.</p> <p>I can model force fields using diagrams and interpret them.</p> <p>I can describe some examples of cause and effect in science.</p> <p>I can describe the difference between correlation and cause.</p> <p>I can identify linear and proportional relationships from graphs.</p> <p>I can use the formula for straight line to help interpret graphs.</p> <p>I can use gradients to interpret distance-time and speed-time graphs.</p> <p>I can explain the difference between physical and abstract models.</p> <p>I can carry out research related to Physics.</p>	<div style="text-align: center;">  </div> <p>Formative Assessment to be used this term:</p> <ul style="list-style-type: none"> • In class peer and self-assessment of extended answer questions • End of topic questions-exam style worksheets
		<p>I can explain the factors that have led to change in the life expectancy.</p> <p>I can give examples of different kinds of diseases and describe how they are caused.</p>	

	<p style="text-align: center;"><u>Topic 10</u></p> <p>9C – Transition to further study – Biology</p>	<p>I can describe the ways in which white blood cells destroy the microorganisms in the body and explain how this can lead to immunity.</p> <p>I can describe the importance of veterinary doctor to treat animals.</p> <p>I can describe how the nervous system works.</p> <p>I can describe how the hormones affect the body.</p> <p>I can explain how large amounts of human hormones can be produced quickly using genetically modified bacteria.</p> <p>I can calculate median, quartiles and interquartile range of a simple dataset.</p> <p>I can interpret the use of quartiles in comparing variation in a large continuous dataset.</p> <p>I can identify suitable apparatus for measuring distribution and abundance.</p> <p>I can use data from abundance investigations to estimate population size.</p> <p>I can give examples of how surface area : volume ratio affects organisms.</p> <p>I can describe how osmosis happens.</p> <p>I can explain how infectious diseases affect organisms.</p>	
	<p style="text-align: center;"><u>Topic 11</u></p> <p>9H – Chemistry STEM Project</p>	<p>I can identify the important elements of an advert.</p> <p>I can research and solve a problem.</p> <p>I can collect information about a given topic.</p> <p>I can research and write a balanced editorial showing both sides of an argument.</p> <p>I can plan an investigation to find out how different variables affect the amount of copper produced during the electrolysis of copper sulphate solution.</p>	

	<p>I can create a card/advert to promote a brand for catalytic converter.</p>	
	<p>I can recall the basic principles of electricity.</p> <p>I can state what is meant by a force field.</p> <p>I can describe shape of a magnetic field.</p> <p>I can recall the factors that affect the strength of gravity.</p> <p>I can calculate weight of a mass.</p> <p>I can explain why an insulating material can be given a charge by rubbing.</p> <p>I can describe how electrically charged objects affect each other.</p> <p>I can describe an electric field.</p> <p>I can explain how switches can be used to control different parts of a circuit.</p> <p>I can recall how current behaves in series and parallel circuits.</p> <p>I can describe how voltage behaves in series and parallel circuits.</p> <p>I can describe the possible career development related to study of electricity.</p> <p>I can describe some factors that affect resistance.</p> <p>I can use the formula relating voltage, current and resistance.</p> <p>I can round off numbers to a given number of decimal places.</p> <p>I can round off numbers to a given number of significant figures.</p> <p>I can describe an electromagnet and its magnetic field.</p>	<p>Summative assessment</p> <p>Mid-term assessment: after first 2 topics of the term.</p> <p>End of term assessment: after next 2 topics of the term.</p> 

Topic 12

9J – Force fields and electromagnets

I can describe how the strength of an electromagnet can be changed.

I can describe some applications of electromagnets.

I can describe the risks associated with space flights.

