

Year Group: 11	Subject: Triple Science	Term: Spring 2021
Topic	Key Learning points	Assessment
Biology: Transport and homeostasis	<p><i>End Point: To understand how exchange surfaces in mammals enable efficient exchange of substances. To understand how animals coordinate and control their internal environment</i></p> <ul style="list-style-type: none"> • Know the general features of exchange surfaces to include the idea of increased surface area, a short diffusion pathway and maintenance of a concentration gradient increasing the rate of diffusion. • Know that smaller organisms with a large SA:V can obtain reactants for chemical processes via simple diffusion whereas the larger an organism gets the smaller the SA:V is meaning they require specialised exchange surfaces. • Know the function and constituent parts of the circulatory system. • Know the aerobic and anaerobic respiration equation. • Know the parts of the endocrine system and how they control homeostasis including thermoregulation, osmoregulation, glucose regulation and general metabolism. • Know the stages in the menstrual cycle and how hormones control these stages. • Know how hormones can be used as a form of birth control. 	<p>Students will be formatively assessed during each topic by past paper question end of topic tests completed in lesson time.</p> <ul style="list-style-type: none"> • Students will complete a variety of consolidation homework throughout the term • After each end of topic test there will be an opportunity for students to review their understanding • Teachers will provide students with targeted feedback, based on their test performance
Chemistry: Fuels and Earth's atmosphere	<p><i>End Point: To understand where and how we obtain fuels and process them for use in the modern world. To understand the composition of our current atmosphere and how it changed over time.</i></p> <ul style="list-style-type: none"> • Know that crude oil and natural gas are hydrocarbons formed from organic material over millions of years. • Know how the process of fractional distillation allows us to obtain more useful mixtures of hydrocarbons from crude oil. • Understand the link between hydrocarbon chain length, volatility and applications in the real world. • Know that hydrocarbons can be broken down into more useful substances using a process called cracking. • Know the equations for complete and incomplete combustion including how products of incomplete combustion are often undesirable. • Know the different forms of pollution given off by combustion to include the effect of greenhouse gases and acid rain. • Know the composition of the Earth's atmosphere when it first formed. • Understand the processes that lead to the Earth's atmosphere changing over millions of years. 	<p>At the end of the term students will have a summative assessment. This will be a 60-mark exam paper (20 marks from each discipline), which will be marked by their teacher.</p>
Physics: Particle model, forces and matter	<p><i>End Point: To understand how the particle model explains the properties of matter and what happens when energy is transferred to or from a substance. .</i></p> <ul style="list-style-type: none"> • Know that substances can be represented at the atomic level with the use of particle diagrams. • Understand what is meant by the term density in terms of particles and be able to calculate density given the mass and volume of an object. • Know that changes of state require energy and that this means the temperature of a substance will remain constant whilst changing state. • Know that there is a linear relationship between force and extension of a spring until the force applied exceeds the elastic limit of the spring. • Know how to calculate the spring constant of a spring given the force applied and the extension of the spring. To be able to calculate the work done by a spring using the spring constant. • Understand the link between the density of a fluid and how much upthrust it can provide in terms of particles. 	