

Year Group: 10	Subject: Triple Science	Term: Summer 2022
Topic	Key Learning points	Assessment
Biology: Health and Disease	<p><i>End Point: To know how different pathogens can cause us harm and understand the bodies various defence mechanisms to infectious disease.</i></p> <ul style="list-style-type: none"> • Know the different facets of health including social, mental, emotional and how these are intertwined. • Know that non-communicable diseases develop due to a number of factors including genetics, diet and lifestyle and know specific treatments of cardiovascular disease. • Know that a pathogen is a micro-organism that causes humans harm and that there are different types of pathogen (bacteria, viruses and fungi). • Know the mode of transmission for communicable diseases and the body's defences against infection. • Know that immunity develops from exposure to a pathogen and that vaccinations are a safe way of exposing the immune system to pathogens. • Know how medicines such as antibiotics and monoclonal antibodies are developed and used to treat infections. 	<p>Students are formatively assessed during each topic by in-class assessment tasks which are self-marked.</p> <ul style="list-style-type: none"> • Recall starters focus on prior knowledge. • Key takeaway plenaries focus on consolidating knowledge from that lesson. • Structured exam-style question homework is set weekly which is assessed at the start of lessons.
Chemistry: Using and obtaining metals. Mole calculations. Transition metals and quantitative analysis	<p><i>End Point: To understand the reactivity of metals and methods that they can be extracted.</i></p> <ul style="list-style-type: none"> • Know that metals have different reactivities and that a more reactive metal will displace a less reactive metal from a compound. • Know that displacement reactions are redox reactions. • Know that an ore is a rock containing metal compounds, some unreactive metals occur in a native state. • Know that metals less reactive than carbon can be extracted from ores by heating with carbon. • Know that metals more reactive than carbon are extracted using electrolysis. • (H) Know that bioleaching and phytoextraction are biological methods of extracting metals. • Know that the empirical formula of a substance is the whole number ratio of atoms of each element and that the molecular formula is the actual number of atoms of each element. • Know the properties of transition metals and why converting pure metals to alloys changes their properties. • Know the actual yield of a reaction is lower than theoretical yield and be able to calculate percentage yield. • Know how to use Avogadro's law to calculate volumes of gases involved in a gaseous reaction. 	<p>At the end of each half-term students will have a summative assessment. This will be a 60-mark exam paper (20 marks from each topic). This is peer-assessed in the following lesson and feedforward tasks completed.</p>
Physics: Astronomy Forces doing work. Conservation of energy.	<p><i>End Point: To understand how energy can be stored and transferred, the applications of this to humans and how to calculate work and power.</i></p> <ul style="list-style-type: none"> • Know the parts of the solar system and how they interact. • Know the evidence for the origin of the Universe and the life-cycle of a star. • Know that energy cannot be created or destroyed it can only be stored or transferred. • Know that energy efficiency is calculated by dividing the useful energy by the total energy in a system. • Know that when a force makes an object move, we say work is being done and can measure this in Joules. • Know that power is defined as the rate at which work is being done and is measured in Watts. • Know that objects can interact by exerting forces on each other and these forces can be contact or non-contact. • Know that forces are vectors as they have a magnitude and direction. • Know that the space around an object where it can affect other objects is called a force-field. • (H) Know how to use a scale diagram to calculate resultant force on an object with multiple forces acting on it. 	