

2023/24 THE HAYLING COLLEGE- SCIENCE. YEAR 10

	AUTUMN TERM			SPRING TERM			SUMMER TERM		
TOPICS	DISEASES	BIOENERGETICS	CELLS/ ORGANISATION RECAP	QUANTITATIVE CHEMISTRY	CHEMICAL REACTIONS	ATOMS/ BONDS RECAP	ELECTRICAL SAFETY AND DISTRIBUTION	NUCLEAR MODELS AND RADIOACTIVITY	ENERGY RECAP
THE BIG QUESTION	How do diseases differ in symptoms, effects, and treatment?	What are the vital processes of photosynthesis?	How do cells work?	How do we use the periodic table to complete a range of quantitative calculations?	How is chemical energy used in reactions?	What is the universe made of?	How do we generate, measure, and use electrical energy?	Why are some materials denser than others and how do we measure this difference?	What is energy?
ACQUIRED KNOWLEDGE Includes disciplinary (skills based) and substantive precise outcomes for each knowledge bloke. Alongside opportunities to explore SMSC related subjects when appropriate.	Identify the difference between non-communicable and communicable. Naming each of the different pathogens with examples. Describe how disease can be avoided and treated.	Investigate how energy is liberated with and without oxygen in our cells. Consider how this compares to Photosynthesis.	Explore the differences between cells enables them to specialise. Sequence how they grow and divide and model how materials are transported. Model how organs function	Use quantitative analysis to determine the formulae of compounds and the yields from reacting masses. Determine concentration of solutions. <u>Titration and yields.</u>	Model how different chemical changes take in or give out energy to produce products. Experimentally produce salts, and then break them back down through electrolysis. <u>Bond enthalpies.</u>	Identify -atomic structures and link to the periodic table and model how peer review developed it. Explain how the physical and chemical properties of materials are influenced by their bonds. <u>Transition elements and nano particles.</u>	Analyse the real-world applications of electrical circuits and describe the differences between electrical circuits and perform electrical calculations. <u>Electrical fields.</u>	Show how the atomic model has changed over time through peer review. Use the particle model is to predict the behaviour of solids, liquids and gases and identify the products to nuclear decay. <u>Nuclear fission and fusion.</u>	Describe the difference stores of energy using real world examples. Model how heat can be transferred and link the heat capacity of different materials.
ASSESSMENT Formative assessments are accompanied by a question level analysis and teacher feedback. This is graded using our EDSM criteria and reported to parents termly.	Diseases end of topic formative assessment.	bioenergetics end of topic formative assessment.	Cells/organisation end of topic formative assessment	quantitative chemistry end of topic formative assessment.	chemical reactions end of topic formative assessment. Biology paper 1	atoms & the periodic table end of topic formative assessment	electrical safety and distribution end of topic formative assessment.	nuclear models and radioactivity end of topic formative assessment. Chemistry paper 1	energy end of topic formative assessment
KEY TERMS Each topic is accompanied by a set of key words that are reinforced in each lesson	<u>Biology key terms:</u> *	<u>Biology key terms:</u> *	<u>Biology key terms:</u> *	<u>Chemistry key terms:</u> *	<u>Chemistry key terms:</u> *	<u>Chemistry key terms:</u> *	<u>Physics key terms:</u> *	<u>Physics key terms:</u> *	<u>Physics key terms:</u> *
HOMELEARNING Students are expected to study up to an hour each week	fortnightly SENECA tasks	fortnightly SENECA tasks	fortnightly SENECA tasks	fortnightly SENECA tasks	fortnightly SENECA tasks	fortnightly SENECA tasks	fortnightly SENECA tasks	fortnightly SENECA tasks	fortnightly SENECA tasks

* Students will need to be members of the science resources google webpage to access these resources. , Triple science content.