

Long Term Plan Year 9 2020-21

Temperance Term

	W/C	7th September	14th September	21st September	28th September	5th October	12th October	19th October	HALF TERM	
Teacher 1	Topic	B1 - Cell Biology								
		Students should be able to, when provided with appropriate information, explain how the structure of different types of cell relate to their function in a tissue, an organ or organ system, or the whole organism.								
	Challenge	Use estimations and explain when they should be used to judge the relative size or area of sub-cellular structures								
	Assessment	End of unit exams								
Teacher 2	Topic	P1 – Energy								
		There are changes in the way energy is stored when a system changes. Students should be able to describe all the changes involved in the way energy is stored when a system changes, for common situations. For example: <ul style="list-style-type: none"> • an object projected upwards • a moving object hitting an obstacle • an object accelerated by a constant force • a vehicle slowing down • bringing water to a boil in an electric kettle. 								
	Challenge	Experimentally compare and contrast two electric motors that both lift the same weight through the same height but one does it faster than the other.								
	Assessment	End of unit exams								

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	W/C	2nd November	9 th November	16th November	23rd November	30 th November	7 th December	CHRISTMAS	
Teacher 1	Topic	C1 – Atomic structure and the periodic table							
		Explaining and describing the following: In covalent bonding the particles are atoms which share pairs of electrons. For metallic bonding the particles are atoms which share delocalised electrons. Ionic bonding occurs in compounds formed from metals combined with non-metals. Covalent bonding occurs in most non-metallic elements and in compounds of non-metals. Metallic bonding occurs in metallic elements and alloys.							
	Challenge	Experimentally determine the empirical formula of an ionic compound from a given model or diagram that shows the ions in the structure							
	Assessment	End of Unit exams							
Teacher 2	Topic	B2 - Organisation							
		Students should know the structure and functioning of the human heart and lungs, including how lungs are adapted for gaseous exchange. Students should be able to describe the relationship between health and disease and the interactions between different types of disease.							
	Challenge	Students should be able to evaluate the advantages and disadvantages of treating cardiovascular diseases by drugs, mechanical devices or transplant.							
	Assessment	End of Unit exams							

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Justice Term

	W/C	4 th January	11 th January	18 st January	25 th January	1st February	8 th February	HALF TERM	
Teacher 1	Topic	C1 – Atomic structure and the periodic table							
		Nanoparticles have many applications in medicine, in electronics, in cosmetics and sun creams, as deodorants, and as catalysts. New applications for nanoparticulate materials are an important area of research.							
	Challenge	Explain the influence of how the side of cube decreases by a factor of 10 the surface area to volume ratio increases by a factor of 10.							
	Assessment	Mid term and end of unit exams							
Teacher 2	Topic	C2 - Bonding, structure, and the properties of matter							
		Students should be able to draw dot and cross diagrams for the molecules of hydrogen, chlorine, oxygen, nitrogen, hydrogen chloride, water, ammonia and methane, and represent the covalent bonds in small molecules, in the repeating units of polymers and in part of giant covalent structures, using a line to represent a single bond							
	Challenge	Students should consider advantages and disadvantages of the applications of these nanoparticulate materials, but do not need to know specific examples or properties other than those specified.							
	Assessment	Mid term and end of unit exams							

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	W/C	22nd February	1st March	8 th March	15 th March	22 nd March	29 th March	EASTER	
Teacher 1	Topic	P3 – Particle Model of Matter							
		Students should be able to explain the differences in density between the different states of matter in terms of the arrangement of atoms or molecules.							
	Challenge	Explain the differences in density between the different states of matter in terms of the arrangement of atoms or molecules.							
	Assessment	Mid term and end of unit exams							
Teacher 2	Topic	C2 - Bonding, structure, and the properties of matter							
		Describe how ionic compounds have regular structures (giant ionic lattices) in which there are strong electrostatic forces of attraction in all directions between oppositely charged ions. These compounds have high melting points and high boiling points because of the large amounts of energy needed to break the many strong bonds.							
	Challenge	Students should be able to use the idea that intermolecular forces are weak compared with covalent bonds to explain the bulk properties of molecular substances.							
	Assessment	Mid term and end of unit exams							

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Courage Term

	W/C	19 th April	26 th April	3 rd May	10 th May	17 th May	24 th May	
Teacher 1	Topic	B3 – Infection and Response						HALF TERM
		Students should be able to explain how diseases caused by viruses, bacteria, protists and fungi are spread in animals and plants.						
	Challenge	Justify how the immune system fights against disease successfully.						
	Assessment	Mid term and end of unit exams						
Teacher 2	Topic	P4 - Atomic Structure						
		Describe the discovery of the electron led to the plum pudding model of the atom. The plum pudding model suggested that the atom is a ball of positive charge with negative electrons embedded in it.						
	Challenge	Justify the significance of the Rutherford experiment for the development of the atom model.						
	Assessment	Mid term and end of unit exams						

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	W/C	7th June	14th June	21 st June	28th June	5 th July	12 th July	SUMMER	
Teacher 1	Topic				B3- Infection and Response				
		KS3 Exams			Students should be able to describe physical and chemical plant defence responses.				
	Challenge				Justify how physical and chemical defences ensure the organism is kept safe.				
	Assessment				End of unit exams				
Teacher 2	Topic				P4 - Atomic Structure				
		KS3 Exams			Relate differences between isotopes to differences in conventional representations of their identities, charges and masses (similar content to Chemistry). Explain the use of Avogadro's number in calculations.				
	Challenge				Compare and contrast isotopes using the correct nomenclature.				
	Assessment				Mid term and end of unit exams				