

2019/ 2020		AUTUMN				SPRING				SUMMER		
		HT1		HT2		HT3		HT4		HT5	HT6	
Enrichment					Year 9 Trip Big bang fair trip. Opportunity for pupils to interact with various professionals and to experience innovative science.				Life project Hatching chicks from eggs. Links to Reproduction topics in year 7, 8 and 9. Link to genetics and variation topic in year 10.			
	Y7	Area of study Intro/Particles Key concepts How do we work safely in the laboratory? What are states of matter? How do particles behave? What is a mixture? Career links Assessment method Practical and graphs	Area of study Cells, microscopes and Mrs Gren Key concepts What is the structure of a cell? What do cells build? Transplant issues. Using microscopes Career links Microbiologists Assessment method Model and low stakes quiz	Area of study Energy stores and transfers Key concepts In what forms do we find energy? How is energy transferred between these stores? Career links Assessment method Low stakes quiz	Area of study Chemical reactions and changes Key concepts What happens to particles in chemical reactions? Why are reactions difficult to reverse? Career links Assessment method Low stakes quiz	Area of study Genes, variation and inheritance Key concepts Where does variation in a species come from? Where is DNA and what is its structure? Career links Forensics Assessment method Low stakes quiz End of term exam	Area of study Forces and motion Key concepts What are the different types of forces? How can we measure speed and acceleration? Career links Engineering Assessment method Practical data and Low stakes quiz	Area of study Acids and alkaline Key concepts What is the pH scale? How do acids and alkalis react? Career links Assessment method Low stakes quiz	Area of study Ecosystems Key concepts How is energy transferred in a food chain? How are organisms interdependent? Predator and prey relationships. Career links Ecologists, conservationists Assessment method Low stakes quiz	Area of study Circuits Key concepts What is current and voltage? Energy in circuits? Series and parallel circuits. Career links Assessment method Low stakes quiz End of term exam	Area of study Human reproduction Key concepts What are gametes? Functions of reproductive organs. Embryonic and foetal development. Career links Health professionals Assessment method Low stakes quiz	Area of study Waves Key concepts What are the properties of waves? What are the uses of sound and light? Career links Assessment method Low stakes quiz End of year exam
	Y8	Area of study Atoms and periodic table Key concepts How was the periodic table developed? What is an atom? Career links Assessment method Model and Low stakes quiz	Area of study Respiration and photosynthesis (organ systems) Key concepts What is needed for photosynthesis and respiration? What structures do plants and animals have to allow these reactions? Career links Assessment method Low stakes quiz	Area of study Power (electricity) Key concepts Energy in circuits? Power and cost of appliances? Career links Assessment method Low stakes quiz	Area of study Groups 1,7,8 and energetics Key concepts What are the properties of noble gases, alkaline metals and the halogens? What are endothermic and exothermic reactions? Career links Assessment method Low stakes quiz	Area of study Evolution and selective breeding Key concepts What causes variation? How does natural selection work? How is selective breeding different? Career links Assessment method Low stakes quiz End of term exam	Area of study Pressure, moments and gears Key concepts How does particle theory explain pressure? Leavers and moments? Uses of gears. Career links Assessment method Low stakes quiz	Area of study Natural resources Key concepts What are renewable and non-renewable energy resources? Generating electricity and the national grid. Career links Assessment method Low stakes quiz (project?)	Area of study Digestion and nutrition Key concepts What are the organs of the digestive system? What are enzymes and how do they work? Career links Assessment method Low stakes quiz (creative writing of digestive system)	Area of study Magnetism and electromagnetism Key concepts What is a magnetic field? What are magnets used for? How do we make an electromagnet? Career links Assessment method Low stakes quiz End of term exam	Area of study Global impacts Key concepts What is global warming? Why is biodiversity important? How do we impact the globe? Career links Assessment method Presentations and debates	Area of study Plant reproduction Key concepts What are the structures of a flower? How does pollination work? How are seeds dispersed? Career links Assessment method Low stakes quiz
Y9	Area of study Cells & Cellular Processes Key concepts What organelles are there in cells and what are their functions? How do we use a microscope? How do enzymes work? Photosynthesis and the factors and affect its rate. What is respiration? Assessment method End of topic test	Area of study Particles & Properties Key concepts How was the model of the atom developed? How can we use the particle model? How do metal and non-metal bond? What are the properties of various materials? How can we use separation techniques, such as filtration, crystallisation and chromatography to analyse substances? Assessment method End of topic test	Area of study Energy & States of Matter Key concepts How can we determine the density of a substance? What happens to a substance when we heat it or cool it? (Includes specific heat capacity and latent heat) Assessment method End of topic test	Area of study Systems & Structures Key concepts How do the processes of diffusion, osmosis and active transport affect cells? What is mitosis? What exchange and transport systems to organism have? How are these adapted for efficiency? Assessment method End of topic test	Area of study Forces & Motion Key concepts What are Newton's three laws of motion and how do we use them to explain observations? Assessment method End of topic test	Area of study Control & Communication Key concepts How does the nervous system work? What are the functions of hormones in the body? What is the role of hormones in reproduction? Assessment method End of topic test						

Y 10Y

<p>Area of study Quantities and Reactions Key concepts How can we use formulae to make predictions about reactions? How do acids and alkalis react? What is electrolysis and what are its uses? Assessment method End of topic test</p>	<p>Area of study Circuits and Magnetism Key concepts What is a static charge and how is it generated? How do current, voltage and resistance behave in series and parallel circuits? How is energy transferred in circuits? What is a magnetic field. How do electromagnets and electric motors work? Assessment method End of topic test</p>	<p>Area of study Ecosystems Key concepts What is the interdependence of organisms? How are materials cycled through an ecosystem? Assessment method End of topic test</p>	<p>Area of study Patterns in the periodic table Key concepts What are the properties of the alkali metals, halogens and Nobel gases? What is the reactivity series? Assessment method End of topic test</p>	<p>Area of study Waves and radioactivity Key concepts What are the properties of waves? How do waves interact with materials? (Reflection/refraction) What is radioactive decay and radiation? Assessment method End of topic test</p>	<p>Area of study Genetics Key concepts How are characteristics inherited? What is meiosis? What is evolution? Assessment method End of topic test</p>
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Y 11

<p>Area of study Rates of reactions Key concepts How can you use the particle theory to explain rates of reactions? What are catalysts? Assessment method End of topic test</p>	<p>Area of study Energy Key concepts In what forms do we find energy? How is energy transferred between these stores? Assessment method End of topic test</p>	<p>Area of study Biology and our lives Key concepts Why is biodiversity important? How do we negatively impact biodiversity? (includes conservation) What is selective breeding? How do diseases spread and how can their spread be controlled? How do vaccines and the immune system work? What are non-communicable diseases? Assessment method End of topic test</p>	<p>Area of study Using resources Key concepts How are metals extracted? How can we use resources responsibly? What is the chemical structure of components of crude oil? (Fractional distillation, cracking) Assessment method End of topic test</p>	<p>Area of study Providing Energy Key concepts What factors affect stopping distance on vehicles? How is electricity generated and supplied? What are issues with generation and supply of electricity? Assessment method End of topic test</p>	<p>Area of study Exam preparation practise and revision</p>		
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