Notes

Based on the proposed schemes of work to be taught from September 2022 which are currently in development and are founded in the Pearson Exploring Science Working Scientifically adjusted and adapted for the requirements of our students. The schemes of work are designed to challenge our students, develop independent thinking skills and to create resilient learners.

 Faculty
 Science

 Subject group
 Subject
 KS3 Science

		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7
		Curriculum / Syllabus coverage						
	Unit title	Practical Skills	Forces, energy and electricity	Particles, Acids and Mixtures	Cells, tissues, organs and systems	More Energy	Resources from the Earth	Habitats and Adaptations
	Subject Knowledge introduced / developed / revised	Introduced The Scientific method, developing and testing hypotheses, selecting and using scientific equipment, recording results, graph and table skills Developed - Investigations (KS2). Revised - none	Introduced: Energy changes and transfers, changes in systems, forces and motion,current electricity, pressure Developed - investigations (KS2). Revised - none	Introduced: Particle nature of matter, atoms elements and compounds, pure and impure substances, chemical reactions Developed - Investigations (KS2). Revised - none	Introduced Structure and function of living organisms, skeletal, nervous and skeleto- muscular systems, nutrition and digestion, gas exchange sytems Developed - Investigations (KS2). Revised - none	Introduced: Renewable and non-renewable sources of energy, wind farm debate, insulation, heat exchange, forms of energy, energy transfers Developed - Investigations (KS2). Revised - Forces, energy and electricity	Introduced Earth and atmosphere Developed particle nature of matter, atoms elements and compounds, pure and impure substances, chemical reactions, investigations (KS2). Revised - Particles, acids and mixtures	Introduced Relationships in an ecosystem Developed - Investigations (KS2) gas and exchange systems, structure and function of living organisms Revised - Cells tissues, organs and systems
Year 7	Skills developed / extended / used	Developed - Numeracy and graph skills, scientific attitudes, experimental skills, analysis and evaluation, measurements - recording results and observations at Secondary level - coming to a balanced conclusion founded in reliable evidence Extended - Investigations at Key Stage 2 Used - Literacy, reading and numeracy skills	Developed - Numeracy and graph skills, scientific attitudes, experimental skills, analysis and evaluation, measurements - recording results and observations at Secondary level - coming to a balanced conclusion founded in reliable evidence Extended - Investigations at Key Stage 2 Used - Literacy, reading and numeracy skills	Developed - Numeracy and graph skills, scientific attitudes, experimental skills, analysis and evaluation, measurements - recording results and observations at Secondary level - coming to a balanced conclusion founded in reliable evidence Extended - Investigations at Key Stage 2 Used - Literacy, reading and numeracy skills	Developed - Numeracy and graph skills, scientific attitudes, experimental skills, analysis and evaluation, measurements - recording results and observations at Secondary level - coming to a balanced conclusion founded in reliable evidence Extended - Investigations at Key Stage 2 Used - Literacy, reading and numeracy skills	Developed - Numeracy and graph skills, scientific attitudes, experimental skills, analysis and evaluation, measurements - recording results and observations at Secondary level - coming to a balanced conclusion founded in reliable evidence Extended - Investigations at Key Stage 2 Used - Literacy, reading and numeracy skills	Developed - Numeracy and graph skills, scientific attitudes, experimental skills, analysis and evaluation, measurements - recording results and observations at Secondary level - coming to a balanced conclusion founded in reliable evidence Extended - Investigations at Key Stage 2 Used - Literacy, reading and numeracy skills	Developed - Numeracy and graph skills, scientific attitudes, experimental skills, analysis and evaluation, measurements - recording results and observations at Secondary level - coming to a balanced conclusion founded in reliable evidence Extended - Investigations at Key Stage 2 Used - Literacy, reading and numeracy skills
	Opportunities to develop 'Respectful attitudes' / Inclusion and Diversity	Establishing the rules and behaviours in the secondary science laboratory - laboratory safety, collaborative working	Laboratory safety, collaborative working	Laboratory safety, collaborative working	Laboratory safety, collaborative working	Laboratory safety, collaborative working, debate	Laboratory safety, collaborative working	Laboratory safety, collaborative working
	Links to 'Destinations and Employability'	Developing early skills for employment - literacy, critical thinking and analysis, recording and analysing data, working in groups, considering and listening to others opinions	Developing early skills for employment - literacy, critical thinking and analysis, recording and analysing data, working in groups, considering and listening to others opinions	Developing early skills for employment - literacy, critical thinking and analysis, recording and analysing data, working in groups, considering and listening to others opinions	Developing early skills for employment - literacy, critical thinking and analysis, recording and analysing data, working in groups, considering and listening to others opinions	Developing early skills for employment - literacy, critical thinking and analysis, recording and analysing data, working in groups, considering and listening to others opinions	Developing early skills for employment - literacy, critical thinking and analysis, recording and analysing data, working in groups, considering and listening to others opinions	Developing early skills for employment - literacy, critical thinking and analysis, recording and analysing data, working in groups, considering and listening to others opinions
	Enrichment Opportunities offered or developed	Practical activities throughout the module and Key Stage 3 science club	Practical activities throughout the module and Key Stage 3 science club	Practical activities throughout the module and Key Stage 3 science club	Practical activities throughout the module and Key Stage 3 science club	Practical activities throughout the module and Key Stage 3 science club	Practical activities throughout the module and Key Stage 3 science club	Practical activities throughout the module and Key Stage 3 science club

	Subject group	Subject KSS Science						
		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7
		Curriculum / Syllabus coverage						
	Unit title	Earth and Space	Developing Life	Chemical reactions	Forces and fluids	Issues in Biology	More chemical reactions	Practical Skills
	Subject Knowledge introduced / developed / revised	Introduced Space physics Developed Structure of the Earth, forces, energy, describing motion, forces and motion, balanced forces, gravity and orbital motion Revised - Materials from our Earth	Introduced Reproduction in humans and plants Developed Structure and function of living organisms, nutrition and digestion, gas and exchange systems Revised - Cells, tissues, organs and systems	Introduced The Periodic Table Developed The particulate nature of matter, atoms elements and compounds, chemical reactions Revised Resources from our Earth, Particles, Acids and Mixtures	Introduced: Kinetic energy and gravitational potential energy calculations, pressure, materials, pressure Developed - Energy, changes and transfers, changes in systems, forces and motion Revised - Forces, energy and electricity, Energy resources	Introduced: GCSE biology content Developed - Relationships in an ecosystem, genetics and evolution, gas and exchange systems, structure and function of living organisms, reproduction and health, energy in ecosystems, genetics and evolution, disease, control systems Revised - Developing Life, Cells, tissues, organs and systems, habitats and ecosystems	Introduced: Energetics, Reactivity series of metals, Earth as a source of limited resources, solubility Developed - The Periodic Tablepure and impure substances, chemical reactions Revised - Laboratory Science, Particles, Acids and Mixtures	Introduced The Scientific method, developing and testing hypotheses, selecting and using scientific equipment, recording results, graph and table skills Developed - Investigations (KS2). Revised - none
Year 8	Skills developed / extended / used	Developed - Numeracy and graph skills, scientific attitudes, experimental skills, analysis and evaluation, measurements - recording results and observations at Secondary level - coming to a balanced conclusion founded in evidence - development and use of models Extended - Investigations at Key Stage 2 and from Year 7 Used - Literacy, reading and numeracy skills	Developed - Numeracy and graph skills, scientific attitudes, experimental skills, analysis and evaluation, measurements - recording results and observations at Secondary level - coming to a balanced conclusion founded in evidence - development and use of models Extended - Investigations at Key Stage 2 and from Year 7 Used - Literacy, reading and numeracy skills	Developed - Numeracy and graph skills, scientific attitudes, experimental skills, analysis and evaluation, measurements - recording results and observations at Secondary level - coming to a balanced conclusion founded in evidence - development and use of models Extended - Investigations at Key Stage 2 and from Year 7 Used - Literacy, reading and numeracy skills	Developed - Numeracy and graph skills, scientific attitudes, experimental skills, analysis and evaluation, measurements - recording results and observations at Secondary level - coming to a balanced conclusion founded in evidence - development and use of models Extended - Investigations at Key Stage 2 and from Year 7 Used - Literacy, reading and numeracy skills	Developed - Numeracy and graph skills, scientific attitudes, experimental skills, analysis and evaluation, measurements - recording results and observations at Secondary level - coming to a balanced conclusion founded in evidence - development and use of models Extended - Investigations at Key Stage 2 and from Year 7 Used - Literacy, reading and numeracy skills	Developed - Numeracy and graph skills, scientific attitudes, experimental skills, analysis and evaluation, measurements - recording results and observations at Secondary level - coming to a balanced conclusion founded in evidence - development and use of models Extended - Investigations at Key Stage 2 and from Year 7 Used - Literacy, reading and numeracy skills	Developed - Numeracy and graph skills, scientific attitudes, experimental skills, analysis and evaluation, measurements - recording results and observations at Secondary level - coming to a balanced conclusion founded in evidence - development and use of models Extended - Investigations at Key Stage 2 and from Year 7 Used - Literacy, reading and numeracy skills
	Opportunities to develop 'Respectful attitudes' / Inclusion and Diversity	Laboratory safety, collaborative working						
	Links to 'Destinations and Employability'	Developing early skills for employment - literacy, critical thinking and analysis, recording and analysing data, working in groups, considering and listening to others opinions	Developing early skills for employment - literacy, critical thinking and analysis, recording and analysing data, working in groups, considering and listening to others opinions	Developing early skills for employment - literacy, critical thinking and analysis, recording and analysing data, working in groups, considering and listening to others opinions	Developing early skills for employment - literacy, critical thinking and analysis, recording and analysing data, working in groups, considering and listening to others opinions	Developing early skills for employment - literacy, critical thinking and analysis, recording and analysing data, working in groups, considering and listening to others opinions	Developing early skills for employment - literacy, critical thinking and analysis, recording and analysing data, working in groups, considering and listening to others opinions	Developing early skills for employment - literacy, critical thinking and analysis, recording and analysing data, working in groups, considering and listening to others opinions
	Enrichment Opportunities offered or developed	Practical activities throughout the module and Key Stage 3 science club	Practical activities throughout the module and Key Stage 3 science club	Practical activities throughout the module and Key Stage 3 science club	Practical activities throughout the module and Key Stage 3 science club	Practical activities throughout the module and Key stage 3 science club	Practical activities throughout the module and Key Stage 3 science club	Practical activities throughout the module and Key Stage 3 science club

	Subject	group	Subject	KS4 Science										
			Unit	1	Unit	2	Unit	3	Unit	4	Unit	5	Unit	6
	Unit	title	B1.1 Building E	abus coverage Blocks of Life	C1.1 Atoms	& Elements	P1.1	Energy	B1.2 Healt	h & Disease	C1.2 Separat	ting Substances	P1.2	Waves
	Subject Knowledge	introduced / developed / revised	Introduced: Structure of Comparing eukaryotic/p Inheritance and interpre Developed: Using micros of DNA.	bacterial cells. rokaryotic cells. eting genetic diagrams. scopes. The structure	Introduced: Structure atom, including subato electronic configuratio Developed: Layout of Revised: States of mat	of the mic particles and m. Isotopes the periodic table. tter.	Introduced: Power, c time, voltage and the National Grid and the electricity. Developed: Rearrang	urrent, efficiency, e associated equations. e transmission of gment of equations.	Introduced: The CNS in and reflex arc. Immun diseases including ant BMI and evaluating th Developed: Health an	ncluding neurones hity and treatments of hibiotics. Calculating he impacts on health. hd disease.	Introduced: Simple a distillation. Making v Developed: Crystalli: Revised: States of m Chromatography and	and fractional vater drinkable. sation techniques. atter, d calculating Rf value.	Introduced : Propert comparing and calcu frequency. The EM s dangers and uses. Developed: Calculati	ies of waves, lating wavelength and pectrum, including the ing wave speed,
Year 9	Skills	Bevelope:: Using microscopes, drawing scientifically and calculating magnification, percentage change. Describing and explaining how to carry DNA extraction. Used: Literacy & numeracy skills. Beoographic constraints History of the development of microscopes			Developed: Data inter Analysisng cooling cur	pretation of graphs. ves/heating curves.	Developed: Mathem using and converting Calcuating effeciency Extended: Combinin Rearrangment of equ Used: Literacy & nun	and converting between units. aring effeciency as percentages. aring effeciency as percentages. aring equations together. angment of equations. : Uteracy & numeracy : Uteracy = the second seco		interpretation.		conversions between nm,m,um which li to high frequency and energy levels. Extended: Combining equations togeth Used: Literacy and numeracy. Ray boxe: practical techniques.		
	Opportunities to develop 'Respectful	attitudes' / Inclusion and Diversity	History of the developm Group work. Peer assessment. Identifying and managin	ent of microscopes. ng risks.	Group work. Peer assessment.		Group work. Peer assessment.		Class/ group discussio difference cultures are and the appropraite c take. Impact of diseases on	ons about how e affected by disease courses of action to NHS (CD/NCD)	Practical activities. Group/team work Identifying and man	aging risks.	Group work. Peer assessment. Identifying and mana	aging risks.
	Links to Destinations	and Employability'	Related to the following Microbiology Biochemistry Lab technician	careers:	N/A		Related to the follow Electrician National grid operato Engineer	ing careers: or	Links to NHS careers.		Related to the follow Forensic science Lab science Quality control office	ving careers: er	Related to the follow Astronomer/NASA Geographical seismic Radio consulatnt/con	ving careers: : Operator/technician mmunications
	Enrichment Opportunities	offered or developed	Presentations by labs/ p	rofessionals.	Research into how the and our understandin time.	model of the atom g have changed over	Virtual national Grid	Tour.	Potential visit to Hunt	erian Museum.	N/A		N/A	

		Unit 1	Unit 2 Curriculum / Sullabus covorage	Unit 3 Curriculum / Sullabus coverage	Unit 4	Unit 5
	Unit title	B2.1 Key Concepts 2	B2.2 Cells and Control	B2.3 hormones	B2.4 Plants	B2.5 The Human Body
	Subject Knowledge introduced / developed / revised	Introduced: Enzymes and the lock and key method. Enzyme activity and factors which impact rate. Movement of substance inluding diffusion, active transport and osmosis. Developed: Movement of molecules. Revised: Food groups and respiration.	Introduced: Call division specifically the stages of both mitosis and meiosis and comparision of both types of cell division. Growth and percentile charts. The role and uses of stem cells. Developed : The structure and roles of specialised cells. Revised : The structure and roles of animal and plant cells.	Introduced: The role of hormones and glands. The effects of hormones on metabolism, the menstrual cycle and diabetes. Developed: Symptoms and treatments of non-communicable diseases. Revised:Organ systems.	Introduced: Limiting factors of photosynthesis. Transpiration and translocation. The structures and roles of xylem and phloem. Developed:Structure of a leaf and the adaptations relating to photosynthesis. Revised: The equaltion and role of photosynthesis.	Introduced: Aerobic and anaerobic respiration.The structures and roles of blood vessels. Gas exchange and the adaptations of the aveoli. Developed: Respiration as a life process. The structure of the heart and lungs. Revised: Organ systems. The structure and roles of cells. The movement of molecules- specifically osmosis, diffusion and active transport.
Year 10	Skills developed / extended / used	Developed: Practical skills - core practical enzymes/pH. Extended: Data interpretion and analysis. Used:Literacy and numeracy. Identifying and managing risks.	Developed: Practical skills. Extended: Data interpretion and analysis. Used: Literay and numeracy. Identifying and managing risks.	Developed: Practical skills. Extended: Data interpretion and data analysis. Used: Literacy and numeracy. Identifying and managing risks.	Developed: Practical skills - core practical the effect of light intensity on the rate of photosynthesis. Extended: Data interpretion and analysis of data presented graphically. Used:Literay and numeracy. Identifying and managing risks.	Developed: Practical skills - dissections. Extended: Data interpretion and data analysis. Used: Literacy and numeracy. Identifying and managing risks.
	Opportuniti es to develop 'Respectful attitudes'/ Inclusion	Group work. Peer assessment.	Group work. Peer assessment. Impacts of stem cell research and cancer.	Class/ group discussions about how difference cultures HRT, IVF	Class/ group discussions on conservation and the effects of deforestation.	Class/ group discussions on heart/ lung transplants and ethics surrounding the issue.
	Links to 'Destination s and Employabilit y'	Related to the following careers: Food Technician Dietitian	Related to the following careers: Stem Cell research	Related to the following careers: Endocrinologist Dietitian Doctor	Related to the following careers: Botonist	Related to the following careers: Doctor Cardiologist Sport science
	Enrichment Opportunities offered or developed	N/A	Potential visit to The Huntarian Museum.	N/A	Potential visit to Kew Gardens,	Potential visit to / virtual tour/ video on Body works exhibition.

	Subject group	Faculty Subject	Science Chemistry								
		Unit	1	Unit	2	Unit	3	Unit	4	Unit	5
	Unit title	Curriculum / Syl	m Again	C2.2 Chemica	Calculations	C2.3 Metals	and Electrolysis	Curriculum /	2.4 Fuels	C2.5 How	much/How fast
	Subject Knowledge introduced / developed / revised	Developed: Structure o subatomic particles configuration. Isotopes. table. Revised: Structure of at table.	f the atom, including l electronic Layout of the periodic rom, isotopes, periodic	Introduced:Calcuating moles. Developed: The conse Balancing equations. C units. Revised: Writing word equations.	empirical formulae rvation of mass. ionversions between and balanced	Introduced: Writing carry out electrolysis movement of ions a products at the elec cycle assessments for impact this has on si Developed : Redox r focus on movement extraction methods the reactivity series. Revised : The reactiv	thalf equations. How to and explaining the different of formation of todes. Designing life or products and the ustainability. eactions with a new of electrons. Different and how they relate to ity series. Recycling.	Introduced: The st of alkanes and alke justification for bo polymerisation. Developed: Combi the environment. F the properties and Revised: The form The composition of current atmospher	ructures and properties enes. The process and the cracking and sustionand the impacts on Fractional distillation and uses of the fractions. of both the early and re. Climate change.	Introduced: Endotl reactions, including interpreting energy Explaining and calc Activation energy a reations. Developed: Rates of factors which can s Revised: Using terr products correctly.	hermic and exothermic g drawing and level diagrams. ualting bond enthalpies, and its role in chemical of reaction and the peed up a reaction. ns reactants and Balancing equations.
Year 10	Skills developed / extended / used	Developed: Data interp Analysisng cooling curve	retation of graphs. es/heating curves.	Introduced:Calcuating and calculating moles. Developed: Writing we equations. Balancing e and using multi step cc Used: Literacy and nur and managing risks.	empirical formulae ord and symbol quations. Rounding alculations. neracy. Identifying	Introduced: Practica Electrolysis. Developed: Data an interpretation of gra Used: Literacy and m and managing risks.	ıl activities - alysis and ıphical data. umeracy. Identifying	Introduced: Practic combustion of fuel Developed: Data a interpretation of g Used: Literacy and and managing risk:	cal activities - Is. nalysis and raphical data. numeracy. Identifying s.	Introduced: Practic area, disappearing catalysts Developed: Data a interpretation of gr drawing tangents a Used: Literacy and and managing risks	al activities - surface cross, temperature, nalysis and raphical data, including ınd calculating gradients. numeracy. Identifying 5.
	Opportunities to develop 'Respectful attitudes' / Indusion and Diversity	Group work. Peer assessment.		Group work. Peer assessment.		Practical activities. Group/team work Identifying and man	aging risks.	Practical activities. Group/team work Identifying and ma	inaging risks.	Practical activities. Group/team work Identifying and ma	naging risks.
	Links to 'Destinations and Employability'	Reinforcement of math	ematical skills.	Reinforcement of mat	hematical skills.						
	Enrichment Opportunities offered or developed	Research into how the r our understanding have	model of the atom and e changed over time.	Practical investigation Independent research	skills.	Practical investigatic Independent resear	on skills ch	Practical investigat Independent resea	ion skills irch	Practical investigati Independent resea	ion skills rch

_	Jupleer group	Jubject				
		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5
	Unit title	P2.1 Matter	P2.2 Radioactivity	P2.3 Electromagnetism	P2.4 Kinetic Theory	P2.5 Forces
	Subject Knowledge introduced / developed / revised	Introduced: F = tx: The spring equation. Developed: Hooke's Law and elasticity. Revised: The effects of forces.	Introduced: Types of Radioactive decay and ionising radiation. Calculating half life and interpreting half life graphs. Dangers and precautions of radioactive exposure. Background radiation. Developed: Development of our understanding of the structure of the atom. Revised: The structure of the atom, including subatomic particles.	Introduced: Earths magentic field and magnets. Motor Effect. Flemming's left hand rule. Unit of charge in Coulombs. Developed: Making and using electromagnets and how to change the strength of an electormagnet. Step-up and step down transformers. Units for charge and potential difference. Revised: Simple magnets and the poles. Attraction and repulsion.	Introduced: Calcualting specific heat capacity. Measuring temperature using Kelvin. Understanding of specific latent heat. Investigating and comparing density of differently shaped objects. Developed: Rearranging equations. Density of irregular objects. Revised: States of matter and coling curves.	Introduced: Analysing motion graphs. Newton's 2nd and 3rd laws. Stopping distances and factors which affect it. Momentum and circular motion. Developed: Calcuating KE, GPE, work & power. Calculating resultant force. Revised: Labelling forces and their effects.
	Skills developed / extended / used	Introduced-practical activities - Hooke's Law. Developed: Data analysis and interpretation of graphical data. Used: Literacy and numeracy. Identifying and managing risks.	Introduced:practical activities - radiation demonstration. Developed: Data analysis and interpretation of graphical data. Used: Literay and numeracy. Identifying and managing risks.	Introduced practical activities - making an electromagnet. Developed: Data analysis and interpretation of graphical data. Used: Uiteray and numeracy. Identifying and managing risks.	Introduced: practical activities - Density, Specific heat capacity, latent heat group/team work Introduced:Data analysis and interpretation of graphical data. Rearrangement of equation. Used: Literacy and numeracy. Identifying and managing risks.	Introduced: practical activities - F=ma group/team work Introduced:Data analysis and interpretation of graphical data. Rearrangement of equation. Used: Literacy and numeracy. Identifying and managing risks.
	Opportunities to develop 'Respectful attitudes' / Inclusion and Diversity	Practical activities. Group/team work. Identifying and managing risks.	Explanation of radioactive accidents and their effects. Discussions of nuclear disasters.	Practical activities. Group/team work Identifying and managing risks.	Practical activities. Group/team work Identifying and managing risks.	Practical activities. Group/team work Identifying and managing risks.
	Links to 'Destinations and Employability'	Reinforcement of mathematical skills. Related to the following career: Engineering, Car Mechanic	Reinforcement of mathematical skills. Related to the following careers: Medical imaging Treatment	National Grid	Reinforcement of mathematical skills.	Reinforcement of mathematical skills.
	Enrichment Opportunities offered or developed			AC/DC current wars. Video on Aurora Borealis from Earth and Space.		

		Faculty	Science	1										
	Subject group	Subject	Biology											
	Subject Broup													
		Unit	1	Unit 2	Unit	3	Unit	4	Unit	5	Unit	6	Unit	7
		Curriculum / Syl	llabus coverage	Curriculum / Syllabus coverage	Curriculum / Syl	labus coverage	Curriculum / Syll	abus coverage	Curriculum / Syllabu	s coverage	Curriculum / S	yllabus coverage	Curriculum / Syllabus	coverage
	Unit title	B3.1 Key concepts,	cells, and Genetics	B3.2 Health and Disease	B3.3 Ev	olution	B3.4 P	lants	B3.5 Hormo	nes	B3.6 Hu	man Body	B3.7 Ecoysten	ns
	Subject Knowledge introduced / developed / revised	Revised: Structure of ba Comparing eukaryotic/L Inheritance and interprr diagrams. The CNS inclu reflex arc. Using microso DNA. The roles of organ animal and plant cells.	acterial cells. prokaryotic cells. eting genetic ding neurones and copes. The structure of nelles and structure of	Revised: Immunity and treatments of diseases including antibiotics. Calculating BMI and evaluating the impacts on health. Health and disease. The human body and systems.	Revised: Genetics and breeding. Human evol evidence. The theory of natural ! evolution. Classificatio specifically kingdoms. interpretting punnett charts. Inheritance and Genetic and environm	the role in selective ution and the selection and n including Drawing and squares and pedigree d structure of DNA. ental variation.	Revised: Limiting facto Transpiration and tran structures and roles of Structure of a leaf and relating to photosynth and role of photosynth	rs of photosynthesis. slocation. The xylem and phloem. the adaptations esis. The equaition esis.	Revised: The role of hormor The effects of hormones o the menstrual cycle and di Symptoms and treatments communicable diseases. O	ones and glands. n metabolism, abetes. : of non- rgan systems.	Revised: Aerobic and respiration. The struct blood vessels. Gas es adaptations of the ar Respiration as a life p of the heart and lung structure and roles o of molecules- specifi and active transport	I anaerobic tures and roles of change and the veoli. grocess. The strucure is. Organ systems. The f cells. The movement cally osmosis, diffusion	Revised: The carbon cycle, v nitrogen cycle. Symbiotic rel Fieldwork techniques. Hum biodiversity/ecosystems.Fee relationships.	vater cycle, ationships. an impacts on dding
Year 11	Skills developed / extended / used	Developed: Using micro scientifically and calcula percentage change. Des how to carry DNA extra Used: Literacy & numer	oscopes, drawing ating magnification, scribing and explaining ction. acy skills.	Developed: Analysing and interpreting graphs. Calculating BMI.	Developed: Modelling Group/team work incl Extended: Data analys of data represented gr Used: Literacy & nume	uding debating. is and interpretation aphically. racy.	Developed: Practical sl the effect of light inter photosynthesis. Extended: Data interpr of data presented grap Used: Literacy and nur and managing risks.	ills - core practical isity on the rate of etion and analysis hically. heracy. Identifying	Used: practical activities group/team work risk assessment Data analysis and Interpre	tation	Developed: Practical Extended: Data inter analysis. Used: Literacy and n and managing risks.	skills - dissections. pretion and data umeracy. Identifying	Developed: Selecting appro techniques and carrying the Extended: Data analysis and of data presented graphicall global warming/clamte cha Used: Literacy and Numerac and managing risks.	praite fieldwork m out safely. l interpretation y. Debating nge. y. Identifying
	Opportunities to develop 'Respectful attitudes' / Inclusion and Diversity	History of the developm	nent of microscopes.	Discussion on the impacts and implications of new diseases Working collaboratively with peers to complete investigations. Discuss and evaluate the treatments currently available and the development of new medicine.	Disussions surroundin evolution and the view groups. Use of DNA/CRISPR/ G Gene editing and the v religious groups. The work and importa Genome Project.	g creation vs v points of religious ene Technology and gious groups. riew points of nce of The Human	Discussing the use of s for financial gain and how farmers can enha Working collaborativel complete investigation	cientific techniques nce crop growth. y with peers to s	Ethical debates on topics s contraception and fertility Working collaboratively wi complete investigations	uch as treatments. th peers to	Working collaborativ complete investigati ethics of using living experiments.	ely with peers to ons. Discussions on organisms for	Ethical debates on understanding the human in biodiversity and the impact environment.	npacts on on the
	Links to 'Destinations and Employability'	Related to the following Microbiology Biochemistry Lab technician Biochemical Scientist	g careers:	Links to NHS careers.	Related to the followir Geneticist Medicine Paeleontologist Archeologist	ng careers:	Related to the followin Botonist Environmentalist Horticultoralist	g careers:	Related to the following ca Endocrinologist Biomedical science Medicine	reers:	Related to the follow Cardiologist Sports science Physiotherapist Anatomist	ing careers:	Related to the following care Ecologist Environmental science Climate scientist	eers:
	Enrichment Opportunities offered or developed													

	Subject group	Faculty Subject	Science Chemistry]									
		Term Curriculum / Syl	1 llabus coverage	Term Curriculum / Syllabus	2 coverage	Term Curriculum / Sy	3 Ilabus coverage	Term Curriculum / Syl	4 labus coverage	Term Curriculum / Sy	5 yllabus coverage	Term Curriculum / Syllab	6 us coverage
	Unit title	C3.1 Atomic Stru	icture & Bonding	C3.2 Chemical Cha	anges	C3.3 Extra	cting Metal	C3.4 Perio	odic Table	C3.5 Rate	es of Energy	C3.6 Fue	els
	Subject Knowledge introduced / developed / revised	Revised: The structure- the subatomic particles electronic configuration Periodic table. States of surves. Separating subs simple and fractional di water drinkable. Ionic and the properties of th compounds. Solubility r	of the atom including isotopes and n. The layout of the f matter and cooling istillation and making and covalent bonding he ionic and covalent rules.	Revised: Making saits and s Calculating concentration. Ti techniques. Neutralisation ir and balanced equations. The hydrogen concentration. Ac Indicators and their associat changes. Reactions of metals Calculating empirical formulu Conservation of mass and ba equations.	solutions. itration ncluding word e pH scale and cids and alkalis. ted colour ted colour is with acids. lae, moles. alancing	Revised: Writing half carry out electrolysis: movement of ions an products at the electr cycle assessments for impact this has on su: Redox reactions with movement of electron extraction methods a the reactivity series. I he reactivity series. I	equations. How to and explaining the d formation of des. Designing life products and the stainability. a new focus on s. Different nd how they relate to tecycling.	Revised: The propertie groups in the periodic configuration. Calculat abundance & RFM.	es and reactions of table. Electronic ting isotopic	Revised: Rates of rea exothermic reactions activation energy and	ction. Endothermic &	Revised: Alkanes and alka polymeristation, hydrocarbon: atmopshere and climate	enes, cracking, ion, fractional , composition of change.
Year 11	Skills developed / extended / used	Developed: Exam and revision techniques. Data interpretation graphs cooling curves/heating curves. Extended: Used: Modelling, practical skills, group/team work.		Practical skills, data analysis and interpretation. Extended: Used: Writing word and symbol equations, balancing equations, rounding, multi step calculations. Group/team work.		Introduced: Practical Electrolysis. Developed: Data anal interpretation of grap Used: Literacy and nu and managing risks.	activities - ysis and hical data. meracy. Identifying	Developed: Exam and Extended: Used: Literacy and nur and managing risks.	l revision techniques. meracy. Identifying	Developed: Exam an Practical activities - sı disappearing cross, tı group/team work. Ri analysis and Interpre gradients. Extended: Used: Literacy and nı and managing risks.	d revision techniques. urface area, emperature, catalysts. sk assessment. Data tation/ deteriming umeracy. Identifying	Developed: Exam and ret Practical activities, group/team work, risk as Data analysis and Interpr Extended: Used:	vision techniques. sessment, etation.
	Opportunities to develop 'Respectful attitudes' / Inclusion and Diversity	Group/team work. Practical activities. Data Interpretation.	a analysis and	Group/team work. Practical activities. Data anal Interpretation.	lysis and	Group/team work. Practical activities. Da Interpretation.	ta analysis and					Practical activities. Group/team work. Risk assessment.	
	Links to 'Destinations and Employability'	N/A		Reinforcement of mathemat Practical investigation skills. Independent research	tical skills.	Reinforcement of mai Practical investigation Independent research	thematical skills. skills.	Reinforcement of matl	hematical skills.	Reinforcement of ma	thematical skills.	N/A	
	Enrichment Opportunities offered or developed											Practical investigation ski Independent research.	lls.

	Subject group	Faculty Subject	Science Physics]										
		Term Curriculum / Syl	1 labus coverage	Term Curriculum / Sylli	2 abus coverage	Term Curriculum / Sy	3 /llabus coverage	Term Curriculum / Syl	4 Ilabus coverage	Term Curriculum / Sy	5 /llabus coverage	Term Curriculum / Syl	6 labus coverage	
	Unit title	P3.1 Waves	and Energy	P3.2 Forces and	Radioactivity	P3.3 El	ectricity	P3.4 Forces	doing Work	P3.5 M	agnetism	P3.6 N	Natter	
Subject Knowledge introduced / developed / revised Subject Knowledge introduced / developed / revised Subject Knowledge Developed / revised Subject Knowledge Subject Knowledg		and calculating wavelength and frequency. The EM spectrum, including the dangers and uses. Calculating wave speed, distance and time. Using correct units. Power, current, efficiency, time, voltage and the associated using and converting between units. Calcuating efficiency as percentages. Developed: Mathematical skills such as using and converting between units. Calcuating efficiency spreentages.		Revised: Analasing mo Newton's 2nd and 3rd distances and factors w Momentum and circula KE, GPE, work & power resultant force. Labellir effects. Types of Radioa interpreting half life gra precautions of radioact Background radiation. understanding of the subatomic particles.	tion graphs. aws. Stopping which affect it. I'motion. Calculating g forces and their active decay and ulating half life and uphs. Dangers and we exposure. Development of our ructure of the he atom, including	Is. Revised: Resistance and its associal calcualtions. Knowledge and applications it. It. ohns law. Energy. Knowledge and Calcuating application of equations relating to current, voltage and time. Rearrar ind their avalations. Circuit symbols. Series aprallel circuits. gers and ure. lent of our fibe including		Revised: Analasing m Newton's 2nd and 3rd distances and factors Momentum and circul KE, GPE, work & powe resultant force. Labelli effects.	otion graphs. I laws. Stopping which affect it. lar motion. Calcuating er. Calculating ing forces and their	Revised: Earth's mag magnets. Motor Effer hand rule. Unit of cha Making and using ele to change the strengt electormagnet. Step transformers. Units fr potential difference. the poles. Attraction	entic field and t. Flemming's left irrge in Coulombs. tromagnets and how th of an up and step- down or charge and Simple magnets and and repulsion.	Hooke's Law and elasticity. The effects forces. Calcualting specific heat capacity w Measuring temperature using Kelvin. Understanding of specific latent heat. Investigating and companing density of regular objects. Rearranging equations. Density of irregular objects. States of matter and coling curves.		
Year 11	Skills developed / extended / used	Developed: Mathemati and converting betweer efficiency as percentage including conversions b which link to high frequ levels. Extended: Combining en Rearrangment of equati Used: Literacy & numer	cal skills such as using n units. Calcuating es. Mathematical skills etween nm,m,um ency and energy quations together. ions. acy	Developed: Extended: Mathematic technique, working coll Used: Using scientific la analysis	al skills, Exam aboratively, nguage, data	Developed: Trouble s Extended: Mathemat technique, setting up Used: Using scientific analysis	hooting circuits ical skills, Exam circuits language, data	Developed: Extended: Mathemati technique, carrying ou Used: Using scientific observation clearly an analysis	ical skills, Exam ıt practicals safety language, Recording ıd accurately, data	Developed: Extended: Mathemat technique, practical s Used: Using scientific analysis	ical skills, Exam kills language, data	Developed: Extended: Mathemati technique, practical sk Used: Using scientific I analysis	cal skills, Exam ills anguage, data	
	Opportunities to develop 'Respectful attitudes' / Inclusion and Diversity	Working collaboratively complete investigations	with peers to	Working collaboratively complete investigation:	v with peers to S	Working collaborative complete investigatic	ely with peers to	Working collaborative complete investigation	ly with peers to	Working collaborative complete investigatic	ely with peers to	Working collaborativel complete investigation	ly with peers to ns	
	Links to 'Destinations and Employability'	Reinforcement of mathe solving skills.	ematical and problem	Reinforcement of math problem solving skills.	ematical and	Reinforcement of ma problem solving skills	thematical and	Reinforcement of mat problem solving skills.	hematical and	Reinforcement of ma problem solving skills	thematical and	Reinforcement of math problem solving skills.	hematical and	
	Enrichment Opportunities offered or developed													

		Faculty	Science]									
	Subject group	Subject	Biology	1									
		Term	1	Term	2	Term	3	Term	4	Term	5	Term	1
		Curriculum / Sy	yllabus coverage	Curriculum / Sy	/llabus coverage	Curriculum / Sy	llabus coverage	Curriculum / S	Syllabus coverage	Curriculum / S	yllabus coverage	Curriculum / S	vllabus coverage
	Unit title	Topic 1 : Biolo	gical Molecules	Topic 4: Exchan	ge and transport	Topic 2: Cells, Viru	s, and Reproduction	Topic 3 Classificat	tion and Biodiversity	Topic 10:	Ecosystems		
	Subject Knowledge introduced / Developed: / revised	Introduced: Monosacc Polysaccharides, Trigly Strucuture of proteins, Haemoglobin, Inorgan and properties Developed: DNA struc enzymes, Food Tests	charides, Disaccharides, cerides, Phospholipids, , Collegen, and ic ions, water structure cture, Protein Synthesis,	Introduced: Cell surfa Facilitated diffusion, gas exchange systems diseases of the heart, lymphatic system Developed : surface a osmosis, diffusion, ac exchange, circulation, heart, blod vessels, plant transport system	ace membrane, structure of animal s, cardiac cycle, t.tissue fluid, area to volume ratio, ttive transport, gas r, role of blood, the gas exchange in plant, m	Introduced: graticule viral infections, meio: reproduction, Developed: organisa mitosis, R: animal cells, plant	s and scales, viruses, șis, sexual tion and microscopy, cells, prokaryotic cells	Introduced: limitatic Techniques, Biodivei insitu/ex situ conser Developed: classific natural selection and Biodiversity,	ons of species, ID risty at genetic level, vation ation. 3 domains, d evolution,	Introduced: Standar correlation and Spea Developed: biotic al Ecological technique nutrients, Ntirogen c on Biodiversity Revised: Ecosystem	d deviation, T Test, Irman Rank, Id abiotic factors, s, Recycling of ycle, Human influence key terms,		
Year 12	Skills Developed: / extended / used	Developed: Core pract Extended: Practical Ski Used: Risk Assessment Data Analysis and Inte	tical - enzymes ills ts rpretation	Developed: Core prace Extended: Practical SI volume ratio Used: Risk Assessmen Data Analysis and Inte	ctical kills, Surface area to nts erpretation	Developed: Core prace Extended: Practical S Used: Risk Assessmer Data Analysis and Int	ctical - kills hts erpretation	Developed: core pra Extended: Practical S Used: Risk Assessme Data Analysis and In	actical, species index Skills ents terpretation	Developed: Core pro- deviation, T Test, con Rank, Extended: Practical Used: Risk Assessme Data Analysis and Ini	actical, Standard rrelation and Spearman Skills ents terpretation		
	Opportunities to develop 'Respectful attitudes'/ Inclusion and Diversity	N/A		blood doping debate variation in people		variation in people		use of technology to appreciate the value variation in organism	e determine species e of conservation ms	ethical debates understanding huma biodiversity and the	an impact on planet		
	Links to 'Destinations and Employability'	Biochemical scientist food scientist		cardiologist medicine botanist clinical scientist		virologist medicine		geneticist zoologist conservationist		ecologist environmental scien climate scientist	ce		
	Enrichment Opportunities offered or Developed:	university trips practical techniques		dissection of heart, ga hunterian museum	as exchange systems	university trips wellcome museum		trip to colchester zoo natural history muse horniman museum grant museum of zoo	ology	fieldwork (gunners p danbury lakes)	oark, east beach,		

		Term 1	Term 2	Term 3	Term 4	Term 5	Term 1
		Curriculum / Syllabus coverage	Curriculum / Syllabus coverage	Curriculum / Syllabus coverage	Curriculum / Syllabus coverage	Curriculum / Syllabus coverage	Curriculum / Syllabus coverage
	Unit title	Topic 5: Energy for Biological Process	es Topic 6 Microbiology and Pathogens	Topic 7: Modern Genetics	Topic 8: Origins of Genetic Variation	Topic 9: Control systems	
	Subject Knowledge introduced / Developed: / revised	Introduced: glycloysis, link reaction and cycle, oxidative phosphorylation, photosynthetic pigments Developed: aerobic and anaerobic respiration, photosynthesis, structure of	kreb Introduced: microbial techniques, pathogenic agents, endemic diseases Developed: bacteria as pathogens, actions of antibiotics, response to infection ATP	Introduced: gene sequencing, factors affecting gene expression, Developed: stem cells, gene technology, transgenics, DNA	Introduced: dihybrid crosses, gene linkage, gene pools, bottle neck and founder effect Developed : Genetic variation, monohybrid crosses sex linkage and disease	Introduced: endotherms, sympathetic/parasympathetic systems, action potential, excitatory/inhibitory potentials Developed: hormostasis, respiration rates, hormones, chemical control in plants, kidney, osmoregulation, CNS, synapses, effect of drugs, structure of the eye, heart rate	
Year 13	Skills Developed: / extended / used	Developed: Vo2 calculations, volume of a cylinder Extended: Core practical, Practical Skills Used: Risk Assessments, Data Analysis ar Interpretation	Developed: Core practicals Extended: Practical Skills Used: Risk Assessments, Data Analysis and Interpretation	Developed: Core practicals Extended: Practical Skills Used: Risk Assessments, Data Analysis and Interpretation	Developed: Core practical, Hardy Weinberg equation Extended: Practical Skills Used: Data Analysis and Interpretation, Risk Assessments	Developed: Core practical Extended: Practical Skills Used: Risk Assessments Data Analysis and Interpretation	
	Opportunities to develop 'Respectful attitudes' / Inclusion and Diversity	N/A	cultural beliefs when dealing with infection and disease	advantages/disadvantages of gene sequencing, stem cell research, development and use fo human genome, variation in people ethical debates	ethical debates development of inherited diseases variation in people and other living organisms	ethical debates	
	Links to 'Destinations and Employability'	biochemist biomedical science	immunologist data analyst microbiologist biotechnologist	geneticist stem cell research forensic scientist	geneticist	endocrinologist opthalamist cardiologist	
	Enrichment Opportunities offered or Developed:	university trips	royal college of surgeon- hunterian museum	attendance to lectures by key scientists	university trips	dissection of eye, kidney wellcome museum	

	Subject group	Faculty Subject	Science Chemistry											
		Unit Curriculum / Sylla	1 abus coverage	Unit Curriculum / Svllabu	2 us coverage	Unit Curriculum / Sv	3 & 14 llabus coverage	Unit Curriculum / Sv	4 /labus coverage	Unit Curriculum / Si	5	Unit Curriculum / Sv	6 llabus coverage	
	Unit title	Atomic Structure and	the Periodic Table	Bonding and Str	ructure.	Redov	1&2	Inorganic Chemistry	& the Periodic Table	Formulae, Equati Sub	ons and Amount of stance	Organic C	hemistry 1	
	Subject Knowledge introduced / developed / revised	Introduced- Mass Spectri energies and the trends & Developed- isotopes, Ele Revised- Structure of the	ometry, Ionisation & Periodicity. ctronic Configuration. atom.	Introduced- lonic radii and isoelectronic ions, relation bond length and strength bonds, shapes of molecula angles, intermolecular forr properties of water, solvei Developed- lonic bonding, configuration and dot cros metallic bonding, predicte Revised- Structure of the a of ions, physical propertie compounds, giant lattices, carbon	d ionic charge, ship between for covalent es and bond ces, anomalous ints , electronic es diagrams, ed atom, formation es of ionic s, allotropes of	ntroduced- Oxidation numbers, lisproportionation, standard electrode otentials, standard conditions, calculate mf, redox titration. Developed- Formation of ions, oxidising nd reducing agents, half & lonic equations tewised- Redox definitions tevised- Redox definitions			i solubility, patterns in on reactivity, flame ug and boiling ication of ions. nisation energies, 2 elements	Introduced- Avogadr equation, acid-base r standard solutions Developed-Empirica indicators, titrations calculating moles Revised - Calculating economy & molar mi and hazards.	o's constant, Ideal gas eactions, making I formulae, use of and their calculations, RAM, RFM, atom ass. Managing risks	as Introduced- Use of IUPAC, classification c reactions, isomerism. Radicals, electrophiles, nucleophiles, heterolytic fission. Mechanisms of reactions. s, Production and reactions of halogenoalkanes, Developed- Environmental impacts of burning fossil fuels and methods of limitations. Reactions off alkenes, alkane & alcohol. Revised- Hydrocarbons & homologous series. Combustions of fuels,		
Year 12	Skills developed / extended / used	Developed- Modelling, u: Extended- Calculating R/ composition data. Used- Graphical analysis, calcualte peak heights.	sing logarithms. AM from isotopic , probability to	Developed- Modelling, usi plotting data on graphs. Extended- Calculating RAI composition data. Used- Graphical analysis, p calcualte peak heights.	ing logarithms, M from isotopic probability to	Developed- Carrying o investigations, includi Extended- Carrying ou investigations, includi Used- Application of I	out practical ng CPACs. It practical ng CPACs. language.	Developed- Carrying of investigations. Extended- Carrying of investigations, includi Used- Application of I analysis.	out practical ut practical ing CPACs. key language, data	Developed- Converti equations, Extended- Carrying o investigations, includ and planning to man Used- Application of analysis. Mathmatica	ng units, rearranging ut practical ing CPACs. Identifiying age risks and hazards. key language, data I skills.	Developed- Modelling Extended- Carrying ou investigations, includi and planning to mana Used- Application of k analysis. Mathmatical	;. It practical ng CPACs. Identifiyin, ge risks and hazards :ey language, data skills.	
	Opportunities to develop 'Respectful attitudes'/ Inclusion and Diversity	Collaborative working. Developing early skills for literacy, critical thinking a recording and analysing o	r employment - and analysis, data.	Collaborative working.		Collaborative working Developing early skills literacy, critical thinki recording and analysi	for employment - ng and analysis, ng data.	Collaborative working Developing early skills literacy, critical thinki recording and analysi	g. s for employment - ing and analysis, ing data.	Collaborative workin Developing early skill literacy, critical think recording and analys	g. s for employment - ing and analysis, ing data.	Collaborative working Developing early skills literacy, critical thinkin recording and analysin	: for employment - ng and analysis, ng data.	
	Links to 'Destinations and Employability'	Mass spectrometry links	to forensics.	N/A		E cells relate to batte	ries and industry.	N	I/A	Industrial c	ontexts used.	Industrial contexts u impacts of human a which sup	used. Environmental ctivity and the carers oport this.	
	Enrichment Opportunities offered or developed	Develop practical skills ir held spectroscopes. Usin, and techniques.	ncluding use of hand- g new equipment	N/A		Develop practical skill titration equipment a Using new equipment	s including use of nd building e cells. and techniques.	N	I/A	Develop practical skil titration equipment a solutions.Using new techniques.	ls including use of and making standard equipment and	Develop practical skill extracting limonene, o Using new equipment	s including cracking, dehydrating alcohol. and techniques.	

		Unit Curriculum / Sv	7 & 19 Ilabus coverage	Unit Curriculum / Sv	8 & 13 labus coverage	Unit Curriculum / Sv	9 & 16	Unit Curriculum / Sv	10 & 11 Vlabus coverage	Unit Curriculum / Svlla	12 abus coverage	Unit Curriculum /	15 Syllabus coverage	Unit Curriculum /	17 Svilabus coverage	Unit Curriculum / Sv	18 Vilabus coverage
	Unit title	Modern analytical techniques 1 & 2.		Energetics 1 & 2		Kinetics 1 & 2		Equilibirum 1 & 2		Acid- base equilibria		Transition Metals		Organic Chemistry 2		Organic C	hemistry 3
Year 13	Subject knowledge introduced / developed / revised	Introduced- Infrared spectroscopy & analysing the data produced. NMR techniques, uses and data analysis. Liquid chromatography. Developed- Mass Spectrometry & analysing the data produced. Use mass spectra data to deduce organic compound structure. Revised- Chromatography and calculating Rf value.		Introduced- Hess' Law. Standard enthalpy of combustion, formation, neutralisation amd reaction. Lattice energy and Born- Haber cycles. Entropy and changes during reactions. Developed- Combustion of fuels and types of reaction. Calculating bond enthalpy. Energy level diagrams. Standard enthalpy. Polarisation of ions. Revised' Standard conditions. Calculating energy transferred.		Introduced- Maxwell- Boltzmann distribution of molecular energies. Orders with respect to a substance in rate equation. Deducing rate-determining steps. Developed- Collision theory and activation energy. Role of catalysts. Revised - Benefits of using catalysis in industrial reactions.		Introduced - Kc for homogeneous and heterogeneous. Kp for homogeneous and heterogeneous, in terms of equilibirium and partial pressures. Calculate equilibrium constant for both endothermic and exothermic reactions. Developed- Reversible reactions and dynamic equilibrium. Effect of change in temperature, pressure and concentration or pressure on a homogeneous system in equilibrium. Revised- Endothermic and exothermic reactions.		Introduced - BrØnsted- Lowry conjugate acid-base pairs. Calculating pH from hydrogen ion concentration. Comparing weak and strong acids. Deduce the acid dissociation constant for a week acid and carry out relevant calculations. Ionic product of water and using this to calculate pH of strong base. Explaining the action of buffer solutions. Developed- Reversible reactions and dynamic equilibrium. Interpretation of titration curves. Revised-Enthalpy change of neutralisation.		Introduced- Ligands. Developed- Variable oxidation states. Interpretation of titration curves. The colour changes in transition metai lons. Isomerisms. Catalysts and catalytic converters. Revised- Electronic configurations of atoms and ions. Shapes of molecules. Redox reactions and e cell values. Ionic equations.		Introduced - Chirality. Understanding the nature of a racemic mixture. Carbonyl compounds. Carboxylic acids. Developed - Isomerisms. Reaction mechanisms. Functional groups. Revised. Electronic configurations of atoms and ions. Shapes of molecules. Redox reactions and e cell values. Ionic equations.		Introduced - Arenes- benzenes. Amines, amides amino acids and proteins. Organic synthesis. Grignard reagents. Developed - Isomerisms. Reaction mechanisms. Functional groups. Use and development practical techniques. Revised- Electronic configurations of atoms and ions. Shapes of molecules. Redox reactions and e cell values. Ionic equations.	
	Skills developed / extended / used	Developed- Practical sk fragmentation pattern: mass/infrared spectra : Extended- Analysisng n Used- Graphical analys calcualte peak heights.	kills. Analysing s and peaks in spectra. molecular ion peaks. is, probability to	Developed- Practical s analysing energy level Extended- Practical us Carrying out practical including CPACs Used- Rearranging equ units.	kills. Drawing and diagrams and cycles. e of calorimetry. investigations, Jations, conversion of	Developed- Practical of reaction and using Extended- Graphical: drawing tangents on rate of reaction. Usin Carrying out practical including CPACs Used- Rearranging eq units.	skills. Calculating rate therate equation. analysis including graphs and calculating g powers correctly. I investigations, quations, conversion of	Developed- Practical Extended- Graphical- drawing tangents on rate of reaction. Usin Carrying out practical including CPACs Used- Algebraic exprr equiliirum constant.	skills. analysis including graphs and calculating g powers correctly. I investigations, ession for the	Developed- Practical sk Extended- Graphical an Rearrangement of calcu out practical investigati Used- Rearranging equa units.	ills. alysis. Jlations. Carrying ons, including CPAC. ations, conversion of	Developed- Practica Extended- Graphica geometry of differe complexes. Used- Rearranging o units.	I skills. I analysis. Investigating nt transition metal equations, conversion o	Developed - Practica Extended - Graphica Rearrangement of d out practical investi f Used - Rearranging d units.	al skills. I analysis. calculations. Carrying gations, including CPAC. equations, conversion of	Developed- Practical Extended- Graphical Rearrangement of ca out practical investig: Used- Rearranging eq units.	kills. Inalysis. culations. Carrying titons, including CPAC. uations, conversion of
	Opportunities to develop 'Respectful attitudes' / Inclusion and Diversity	Collaborative working. Developing early skills f literacy, critical thinking recording and analysing	for employment - g and analysis, g data.	Collaborative working Developing early skills literacy, critical thinkir recording and analysir	for employment - ng and analysis, ng data.	Collaborative working Developing early skill: literacy, critical thinki recording and analysi	g. s for employment - ing and analysis, ing data.	Collaborative workin Developing early skill literacy, critical thinki recording and analysi	g. s for employment - ing and analysis, ing data.	Collaborative working. Developing early skills f literacy, critical thinking recording and analysing	or employment - g and analysis, g data.	Collaborative worki Developing early sk literacy, critical thin recording and analy	ng. Ills for employment - king and analysis, sing data.	Collaborative worki Developing early sk literacy, critical thin recording and analy	ng. ills for employment - king and analysis, rsing data.	Collaborative working Developing early skill: literacy, critical thinki recording and analysi	; s for employment - ng and analysis, ing data.
	Links to 'Destinations and Employability'	Mass spectrometry link and chemical analysis.	ks to forensic science	Oportunites to consid evaluate theoretical m real and ideal properit Showing students how formal, abstract thinki fundmental questions chemicals and direction change.	er how chemists nodels by comparing tes of chemicals. v chemists use ing to answer about the stability of n of chemical	Ν	N/A	Ν	i/A	N//	Δ.	Developing an appr research is a frontie provides an opport scientific communi new knowledge.	eciation that catalyst r area, and one which unity to show how the ty reports and validates		N/A	N	I/A
	Enrichment Opportunities offered or developed	Further research into the techniques such as test and urine forensically a	he uses of the ting for drugs in blood and in sport.							Opportunity to conside development of theorie and base behaviour sho ideas change as a result and fresh thinking.	er how the historical es explaining acid ow that scientific t of new evidence						

	Subject group	Subject												
		Unit 1		Unit	2	Unit	3	Unit	4	Unit	5	Unit	6	
		Curriculum / Syllabus coverage	e	Curriculum / Syl	labus coverage	Curriculum / Sy	llabus coverage	Curriculum / Syl	llabus coverage	Curriculum / S	Syllabus coverage	Curriculum / Sy	llabus coverage	
	Unit title	12.1: Mathematic skills		12.2: Mechanics		12.3: Electricity		12.4: M	laterials	12.5.	1: Waves	12.5.2: Quantum		
	Subject Knowledge introduced / developed / revised	Introduced - Developed -Rearranging equations, Trigonometry Revised - Mathematical processes		Introduced - Equations of motion, moments, Projectile motion Developed -Forces and motion, Newton's Laws Revised - GCSE Forces and motion topic		Introduced - Circuit rules, Potential Dividers, drift velocity, resistivity, Internal resistance, EMF Developed -Total combined resistance Revised - GCSE Electricity topic		Introduced - Stress, S Modulus, Material pro viscousity Developed -Spring equ Revised - GCSE Matter	Strain, Young operties definitions, uation, Work done r	Introduced - Superp Youngs double slit e Developed -Wave p Revised - GCSE Wav	position, interference, xperiment, Polarisation roperties es	Introduced - Quantum Physics, Developed - Atomic model, wave equati Revised -		
	Siles of the second sec		s De skil Ext Use	Developed - Analysing graph skills, practical skills Extended - Rearrnging equations Used - Numeracy skills		Developed - Constructing circuits Extended - Rearrnging equations, trouble shooting circuits, Result analysis Used - Numeracy skills		Developed - Investigation design, analysis with the aid of IT Extended - Result analysis, practical skills Used - Numeracy skills		Developed - Algebraic and graph skills Extended - Rearrnging equations Used - Numeracy skills		Developed - Algebraic and graph skills Extended - Rearrnging equations Used - Numeracy skills		
Year	Opportunities to develop 'Respectful attitudes' / Inclusion and Diversity	N/A	Wo	orking collaborative vestigations	ly in class	Working collaborative investigations	ly in class	Working collaborative investigations	ly in class	Working collaboration investigations	vely in class	Working collaborative investigations, Wave-	ely in class Particle debate	
	Links to 'Destinations and Employability'	Developing early skills for employmen literacy, critical thinking and analysis, recording and analysing data	nt - De lite rec	eveloping early skills eracy, critical thinkir cording and analysir	for employment - ng and analysis, ng data	Developing early skills literacy, critical thinkir recording and analysi	for employment - ng and analysis, ng data	Developing early skills literacy, critical thinkir recording and analysir	for employment - ng and analysis, ng data	Developing early ski literacy, critical think recording and analy	lls for employment - king and analysis, sing data	Developing early skills literacy, critical thinki recording and analysi	for employment - ng and analysis, ng data	
	Enrichment Opportunities offered or developed													

		Unit	1	Unit	2	Unit	3	Unit	4	Unit	5	Unit	6	Unit	7	Unit	8
		Curriculum / Sylla	abus coverage	Curriculum / Sy	llabus coverage	Curriculum / Syl	labus coverage	Curriculum / Sylla	abus coverage	Curriculum / Syl	llabus coverage	Curriculum / Sy	llabus coverage	Curriculum / Sy	llabus coverage	Curriculum / Sy	llabus coverage
		Electric Fields and Capacit		ric Fields and Capacitors Electromagnetism		Astrophysics		Further Me	Further Mechanics		Nuclear & Particle Physics		Nuclear Radiation		ations	Thermodynamics	
	Subject Knowledge introduced / developed / revised	Developed - S Fules of Electricity Revised- '5 rules of Electricity'		Introduced- F=BIL, Faraday's Law, Lenz's Law Developed- AS Electricity Revised- GCSE Electromagnetism		Introduced- Stars, Thermodynamics of stars, Observation, Cosmology, Gravitation Developed- Mechanics, Circular Motion Revised - Life cycle of star (Separate students only)		lotion, Momentum <mark>d</mark> - Previous AS	Introduced- Subatomic Particles, Conservation rules Developed- Atomic models Revised- Mechanics		Introduced- Energy within decays Developed- Subatomic particles Revised- Types of radioactive decay		Introduced- Simple Harmonic Motion Developed- Waves theory Revised- Mechanics		Introduced- Gas Laws, Thermodynamic Laws, Developed- Latent heat, Specific heat capacity Revised- Particle models of matter		
Year 13	skills developed / extended / used	Developed- Logarithmic analysis Extended- CPAC skills Used- Basic practical skills		Developed- Constructing circuits Extended- CPAC skills Used- Basic practical skills		Developed- Researching and presenting information Extended- CPAC skills Used- Basic practical skills		Developed - Analysing graph skills, practical skills Extended - Rearrnging equations Used - Numeracy skills		Developed- Researching and creating hazard information Extended- CPAC skills Used- Basic practical skills		Developed- Assessing risk in practicals Extended- CPAC skills Used- Basic practical skills		Developed - Analysing graph skills, practica skills Extended - Rearrnging equations Used - Numeracy skills		Developed - Investigation design, analysis with the aid of IT Extended - Result analysis, practical skills Used - Numeracy skills	
	Opportunities to develop 'Respectful attitudes' / Inclusion and Diversity	Collaborative practical sk	ills	Collaborative practica	ıl skills	Collaborative practical	skills	Collaborative practical	skills	Collaborative practical	l skills	Collaborative practica	I skills	Collaborative practica	l skills	Collaborative practica	l skills
	Links to 'Destinations and Employability'	Developing early skills for employment - literacy, critical thinking and analysis, recording and analysing data		Developing early skills for employment - literacy, critical thinking and analysis, recording and analysing data		Developing early skills for employment - literacy, critical thinking and analysis, recording and analysing data		Developing early skills for employment - literacy, critical thinking and analysis, recording and analysing data		Developing early skills for employment - literacy, crítical thinking and analysis, recording and analysing data		Developing early skills for employment - literacy, critical thinking and analysis, recording and analysing data		Developing early skills for employment - literacy, critical thinking and analysis, recording and analysing data		Developing early skills for employment - literacy, critical thinking and analysis, recording and analysing data	
	Enrichment Opportunities offered or developed																