	Chapter	Content	Knowledge	Skills	Key Questions	Assessment	Literacy/numeracy	SMSC
Autumn 1	P13	Electromagnetism: Magnetic fields Magnetic fields and electric currents Electromagnets in devices The motor effect The generator effect		To recall and indentify correct scientific knowledge To be able to describe both the generator and motor effect clearly and concisely To be able to use and manipulate the transformer equations correctly	How does an electric motor work? How can we send electricity across the entire country safely and efficiently?	Diagnostic test on P13 ReACT tasks P13 End of Chapter Test	Key words: Magnetic field, induction, electromagnet, Fleming's Left Hand Rule, motor effect, generator effect, transformer Numeracy: Calculating current and voltage in a transformer and order of magnitude	
	C11	Chemical Analysis Content: Pure Substances and Mixtures Chromatography Gas Tests Testing for Ions Instrumental Analysis	How chromatography can identify between pure and impure substances How chromatography works Tests for common gases	Distinguishing pure substances from impure by melting point Identifying formations Interpreting Chromatograms	How can we use chemical tests to identify unknown substances?	Diagnostic test on C11 ReAct tasks C11 End of Chapter Test	Numeracy: Measuring the height of a chromatogram Calculating the Rf Value of a chromatogram Reading pie charts Analysing graphs Keywords: Formulations, mixtures, chromatogram, retention factor,	Working together to investigate chromatography
	B12	Genetics and Evolution: Reproduction Types of reproduction Cell division in sexual reproduction Fungi The human genome DNA structure and function Protein synthesis Inheritance Mutations Inherited disorders Genetic screening	State the two types of reproduction and distinguish between the two. Go through step by step the process of meiosis and its importance. Explain how fungi reproduce. Explore the journey to the discovery of the human genome. Learn the structure of DNA and what its purpose is. Learn how proteins are made. Describe what is meant by inheritance. List characteristics caused by genetics. Compare characteristics/traits caused by genetics vs. The environment. Recall causes of mutations. Describe what a mutation means in terms of the DNA. Explore different inherited disorders and how they are passed on from one generation to the next. Describe how doctors can screen for genetic disorders.		What is DNA, what is a genome, and why is it so important to be able to analyse the genome of an organism? How are characteristics passed from parents to their offspring? Who are Watson and Crick?	Diagnostic test on B12 ReAct tasks B12 End of Chapter Test	Key words: inheritance, screening, genome, nucleotide, polydactyl, cystic fibrosis, DNA, nucleus, amniocentesis, CVS, template Numeracy: working out fractions, calculating percentages, working out probability	
	B13	Genetics and Evolution: Variation and Evolution Variation Evolution by Natural Selection Selective Breeding Genetic Engineering Cloning Adult Cell Cloning Ethics of genetic technologies	Knowing what is meant by variation. Explaining Darwin's theory of Natural Selection. Explain what is meant by genetic engineering. Describe the process of cloning in plants and animals. List advantages and disadvantages for cloning and other genetic technologies	Compare and contrast different methods of cloning. Evaluate the use of genetic engineering	Who was Charles Darwin? Is cloning widely used in industry?	Diagnostic test on B13 ReAct tasks B13 End of Chapter Test	Key words: natural selection, evolution, cloning, genetic engineering, selective breeding	
Autumn 2	C12	The Earth's Atmosphere History of the atmosphere Changes to the atmosphere Greenhouse Gases Climate Change Atmospheric Pollutants	Understand how the atmosphere formed Changes to the atmosphere over time How greenhouse effect works The importance of peer review How to reduce carbon emissions Problems caused by pollutants	Evaluating the problems with pollutants, calculations of pollutants over time,	How is human activity affecting the Earth's atmosphere?	Diagnostic test on C12 ReAct tasks C12 End of Chapter Test	Keywords: atmosphere, carbon footprint, carbon storage, particulates, global dimming	Evaluating evidence that demonstrates the rise of carbon dioxide leading to climate change

	Chapter	Content	Knowledge	Skills	Key Questions	Assessment	Literacy/numeracy	SMSC
	B14	Genetics and Evolution: Variation and Evolution Variation Evolution by Natural Selection Selective Breeding Genetic Engineering Cloning Adult Cell Cloning Ethics of genetic technologies	Knowing what is meant by variation. Explaining Darwin's theory of Natural Selection. Explain what is meant by genetic engineering. Describe the process of cloning in plants and animals. List advantages and disadvantages for cloning and other genetic technologies	Compare and contrast different methods of cloning. Evaluate the use of genetic engineering	Who was Charles Darwin? Is cloning widely used in industry?	Diagnostic test on B14 ReAct tasks B14 End of Chapter Test	Key words: speciation, antibiotic resistance, evolution, community, distribution, abundance, fossils Numeracy: calculating mean, calculating area	
	Mock exams							
Spring	B17	Biodiversity: The human population explosion Land, water and air pollution Deforestation and peat destruction Maintaining biodiversity Trophic levels and biomass Biomass transfers Factors affecting food security Making food production efficient Sustainable food production	Explore how an increasing human population poses risk and uncertainty for the planet's natural resources. Describe the effects of different types of pollution. Recall food chains and see how energy changes as we move up the food chain. Describe how water and land pollution can disrupt food chains. Discuss how rising food trends can impact the future of food for some communities. Explain how we can make food production more efficient and sustainable.	Justify a point of view on global warming and its contributing factors (deforestation, pollution etc.) and how we as a society can maintain our biodiversity Construct pyramids of biomass and number to scale based on data provided or calculated	What is global warming and why does it matter? How can we make food production more efficient?	Diagnostic test on B17 ReACT tasks B17 End of Chapter Test	Key words: biofuel, deforestation, peat, sustainability, mycoprotein, bioaccumulation, biomass Numeracy: % change, % increase or decrease, calculating mean, interpreting data in a table or graph, drawing a graph, drawing pyramids of biomass and number using a scale	
	Mock exams							
Summer	Revision	To focus on recapping key knowledge and re-address common misconceptions Embed additional exam practice for each chapter Focus on key aspects of required practicals		Recalling important information Exam Technique Spacing Interleaving Elaboration		Summer Exams		