



Long-Term Plan: Science

		Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
Year 7	Topics to be covered:	Unit A: Working in the lab Unit AA: Speed and contact forces	Unit B: Particle model Unit B: Metals and non-metals	Unit C: Light Unit C: Sound Unit C: Wave properties and wave effects	Unit D: Variation Unit D: Human reproduction Unit D: Plant reproduction	Unit E: Earth structure Unit E: Universe Unit E: Gravity	Unit F: Acids and alkalis Unit F: Separating mixtures Unit F: Periodic table
	Skills to be developed:	Development of scientific thinking (Uses of models, applications, risks) Experimental skills and strategies (Developing hypothesis, planning experiments, working safely, sampling, making and recording observations.) Analysis and evaluation (Presenting data, mathematical analysis) Scientific language, units and symbols (Scientific abbreviations and units in equations) Mathematical skills (Averages, equations, rearranging equations, angles, orders of magnitude, geometry)					
	Key assessments taking	Unit A assessment Unit AA assessment	Unit B assessment	Unit C assessment	Unit D assessment	Unit E assessment	Unit F assessment
	Key vocab	Safety Variable Bunsen burner Distance Units Direction	Solid Liquid Gas Particle Volume Movement	Wave Transverse Longitudinal Amplitude Wavelength	Cell Inherited Environmental Fertilisation	Crust Mantle Core Force Non-contact	Indicator Distillation Chromatography Properties
	Opportunities for retrieval practice: KS2 retrieval lessons at the start of each unit Planned retrieval tasks throughout each unit						

Long-Term Plan: Science

		Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
Year 8	Topics to be covered:	Unit G: Current Unit G: Voltage and resistance Unit G: Energy costs	Unit H: Cells Unit H: Movement Unit H: Breathing	Unit I: Elements Unit I: Chemical energy Unit I: Types of reactions	Unit J: Pressure Unit J: Magnets Unit J: Electromagnets	Unit K: Interdependence Unit K: Inheritance Unit K: Evolution	Field work Unit L: Digestion Unit L: Respiration Unit L: Photosynthesis
	Skills to be developed:	Development of scientific thinking (Uses of models, applications, risks) Experimental skills and strategies (Developing hypothesis, planning experiments, working safely, sampling, making and recording observations.) Analysis and evaluation (Presenting data, mathematical analysis) Scientific language, units and symbols (Scientific abbreviations and units in equations) Mathematical skills (Averages, equations, rearranging equations, angles, orders of magnitude, geometry)					
	Key assessments taking place:	Unit G assessment	Unit H assessment	Unit I assessment	Unit J assessment	Unit K assessment	Unit L assessment
	Key vocab	Circuit Series Parallel Efficiency	Animal Plant Carbon dioxide Oxygen	Periodic table Properties Exothermic Endothermic	Volume Particles North and South Attract and repel	Food chain Competition Genetics	Sampling Energy Aerobic Anaerobic
	Opportunities for retrieval practice: KS2 retrieval lessons at the start of each unit Planned retrieval tasks throughout each unit						

Long-Term Plan: Science

		Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
Year 9	Topics to be covered:	Unit M: Energy transfer Unit M: Work Unit M: Heating and cooling	Unit N: Climate Unit N: Earth's resources	RETRIEVAL SKILLS: Cells Investigation skills	RETRIEVAL SKILLS: Atomic structure Energy	Cell biology of eukaryotes and prokaryotes	Energy stores and transfers
	Skills to be developed:	Development of scientific thinking (Uses of models, applications, risks) Experimental skills and strategies (Developing hypothesis, planning experiments, working safely, sampling, making and recording observations.) Analysis and evaluation (Presenting data, mathematical analysis) Scientific language, units and symbols (Scientific abbreviations and units in equations) Mathematical skills (Averages, equations, rearranging equations, angles, orders of magnitude, geometry)					
	Key assessments taking place:	Unit M assessment	Unit N assessment	Cells assessment Investigation skills assessment	Atomic structure assessment Energy assessment	Cell Biology assessment	Energy assessment
	Key vocab	Energy Power Dissipation Conduction	Global warming Greenhouse gas Renewable Sustainable	Eukaryotic Prokaryotic Variables Error	Protons Neutrons Electrons Transfer	Magnification Stem cells Tumour Mitosis	Gravitational potential Kinetic Elastic Transfers
	Opportunities for retrieval practice: KS2 retrieval lessons at the start of each unit Planned retrieval tasks throughout each unit KS3 retrieval tests						

Long-Term Plan: Combined Science: Higher Tier

		Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
Year 10	Topics to be covered:	Biology: Cell biology (recap Y9 term 2 and 3 and movement of molecules) Chemistry: Atomic structure and periodic table Physics: energy (recap Y9 term 2 and 3 and efficiency onwards)	Biology: Bioenergetics Chemistry: Bonding, structure and properties of matter Physics: Electricity	Biology: Organisation Chemistry: Bonding, structure and properties of matter; Quantitative Chemistry Physics: Electricity	Biology: Organisation Chemistry: Quantitative Chemistry Physics: Particle model of matter	Biology: Infection and response Chemistry: Chemical changes Physics: Particle model of matter	Biology Infection and response Chemistry: Chemical changes; Energy changes Physics: Atomic Structure
	Skills to be developed:	Development of scientific thinking (Uses of models, applications, risks) Experimental skills and strategies (Developing hypothesis, planning experiments, working safely, sampling, making and recording observations.) Analysis and evaluation (Presenting data, mathematical analysis) Scientific language, units and symbols (Scientific abbreviations and units in equations) Mathematical skills (Averages, equations, rearranging equations, angles, orders of magnitude, geometry)					
	Key assessments taking place:	Cell Biology assessment Energy assessment	Bioenergetics assessment Atomic structure and periodic table assessment	Electricity assessment Bonding, structure and properties of matter assessment	Organisation assessment Quantitative Chemistry assessment	END OF YEAR ASSESSMENTS Particle model of matter assessment	Infection and response assessment Atomic structure assessment Chemical changes assessment
	Key vocab	Diffusion Osmosis Efficiency Resources Nucleus Electron shell	Respiration Photosynthesis Current Potential difference Covalent Ionic	Enzymes Organ Current Potential difference Moles Concentration	Enzymes Organ Density State Moles Concentration	Pathogen Immunity Density State Reactants Products	Pathogen Immunity Isotope Decay Exothermic Endothermic
	Opportunities for retrieval practice: Planned retrieval tasks throughout each unit KS3 retrieval tests Do now focussing on previous units						

Long Term Plan: Combined Science Foundation Tier

		Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
Year 10	Topics to be covered:	Biology: Cell biology (recap Y9 term 2 & 3 and movement of molecules) Physics: energy (recap Y9 term 2 & 3 and efficiency onwards) Chemistry: Atomic structure and periodic table	Biology: Bioenergetics Chemistry: Bonding, structure and properties of matter Physics: Electricity	Physics: Electricity Biology: Organisation Chemistry: Quantitative Chemistry	Physics: Particle model of matter Chemistry: Chemical changes	Biology: Infection and response Physics: Atomic structure	Physics: Atomic structure Chemistry: Energy changes
	Skills to be developed:	Development of scientific thinking (Uses of models, applications, risks) Experimental skills and strategies (Developing hypothesis, planning experiments, working safely, sampling, making and recording observations.) Analysis and evaluation (Presenting data, mathematical analysis) Scientific language, units and symbols (Scientific abbreviations and units in equations) Mathematical skills (Averages, equations, rearranging equations, angles, orders of magnitude, geometry)					
	Key assessments taking place:	Cell Biology assessment Energy assessment Atomic structure and periodic table assessment	Bioenergetics assessment Bonding, structure and properties of matter assessment	Electricity assessment Organisation assessment Quantitative assessment	Particle model of matter assessment Chemical changes assessment	END OF YEAR EXAMS	Infection and response assessment Atomic structure assessment Energy changes assessment
	Key vocab	Diffusion Osmosis Efficiency Resources Nucleus Electron shell	Respiration Photosynthesis Current Potential difference Metallic Ionic	Enzymes Organ Current Potential difference Relative formula mass Concentration	Density State Energy Reactants Products Electrolysis	Pathogen Immunity Vaccination Isotope Decay Half-life	Pathogen Immunity Isotope Decay Endothermic Exothermic
	Opportunities for retrieval practice: Planned retrieval tasks throughout each unit KS3 retrieval tests Do now focussing on previous units						

Long Term Plan: Biology

		Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
Year 10	Topics to be covered:	Cell biology (recap Y9 term 2 and 3, movement of molecules and culturing microbes)	Bioenergetics	Organisation	Organisation	Infection and response	Infection and response
	Skills to be developed:	Development of scientific thinking (Uses of models, applications, risks) Experimental skills and strategies (Developing hypothesis, planning experiments, working safely, sampling, making and recording observations.) Analysis and evaluation (Presenting data, mathematical analysis) Scientific language, units and symbols (Scientific abbreviations and units in equations) Mathematical skills (Averages, equations, rearranging equations, angles, orders of magnitude, geometry)					
	Key assessments taking place:	Cell Biology assessment	Bioenergetics assessment	Organisation assessment 1 (human organisation)	Organisation assessment 2 (plant organisation)	END OF YEAR ASSESSMENTS	Infection and response assessment
	Key vocab	Diffusion Osmosis Active transport Semipermeable	Aerobic Anaerobic Limiting factor Enzyme	Organ System Structure Function	Organ System Structure Function	Pathogen Immunity Defences Monoclonal antibody	Pathogen Immunity Defences Monoclonal antibody
	Opportunities for retrieval practice: Planned retrieval tasks throughout each unit KS3 retrieval tests Do now focussing on previous units						

Long Term Plan: Chemistry

		Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
Year 10	Topics to be covered:	Atomic Structure and Periodic Table	Bonding, structure and properties of matter	Quantitative Chemistry 1	Chemical Changes including some Quantitative Chemistry	Chemical Changes including some Quantitative Chemistry	Energy Changes
	Skills to be developed:	Development of scientific thinking (Uses of models, applications, risks) Experimental skills and strategies (Developing hypothesis, planning experiments, working safely, sampling, making and recording observations.) Analysis and evaluation (Presenting data, mathematical analysis) Scientific language, units and symbols (Scientific abbreviations and units in equations) Mathematical skills (Averages, equations, rearranging equations, angles, orders of magnitude, geometry)					
	Key assessments taking place:	Atomic structure and Periodic Table assessment	Bonding, structure and properties of matter assessment	Quantitative Chemistry 1 assessment	Chemical Changes 1 assessment	END OF YEAR ASSESSMENT Chemical Changes 2 assessment	Energy Changes assessment
	Key vocab	Proton Neutron Electron Groups Properties Patterns	Ionic Covalent Metallic Intermolecular forces Properties Electrostatic forces	Relative atomic mass Relative formula mass Isotope Conservation of mass Moles Equation	Oxidation Reduction Reactivity Metal Acid Displacement	Titration Concentration Electrolysis Half equation	Exothermic Endothermic Reaction profile Energy
	Opportunities for retrieval practice: Planned retrieval tasks throughout each unit KS3 retrieval tests Do now focussing on previous units						

Long Term Plan: Physics

		Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
Year 10	Topics to be covered:	Energy (recap Y9 term 2 and 3 and efficiency onwards) Electricity	Electricity	Particle model of matter	Atomic Structure	Revision paper 1 Forces	Forces
	Skills to be developed:	Development of scientific thinking (Uses of models, applications, risks) Experimental skills and strategies (Developing hypothesis, planning experiments, working safely, sampling, making and recording observations.) Analysis and evaluation (Presenting data, mathematical analysis) Scientific language, units and symbols (Scientific abbreviations and units in equations) Mathematical skills (Averages, equations, rearranging equations, angles, orders of magnitude, geometry)					
	Key assessments taking place:	Energy assessment	Electricity assessment	Particle model of matter assessment	Atomic structure assessment	END OF YEAR ASSESSMENT	Forces assessment
	Key vocab	Transfer Efficiency Resources Stores	Circuit Current Potential difference Resistance	Density Mass Volume Energy	Atoms Nucleus Radioactive decay Half-life	Scalar Vector Resultant	Moments Pressure Elasticity Velocity
	Opportunities for retrieval practice: Planned retrieval tasks throughout each unit KS3 retrieval tests Do now focussing on previous units						

Long-Term Plan: Combined Science Higher Tier

		Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
Year 11	Topics to be covered:	Biology: Homeostasis and response Chemistry: Energy changes; Rate and extent of chemical change Physics: Forces	Biology: Inheritance, variation and evolution Chemistry: Rate and extent of chemical change Physics: Forces	Biology: Inheritance, variation and evolution; Ecology Chemistry: Organic Chemistry; Chemical analysis Physics: Waves; Magnetism	Biology: Ecology Chemistry: Chemistry of the atmosphere; Using resources Physics: Magnetism	REVISION	REVISION
	Skills to be developed:	Development of scientific thinking (Uses of models, applications, risks) Experimental skills and strategies (Developing hypothesis, planning experiments, working safely, sampling, making and recording observations.) Analysis and evaluation (Presenting data, mathematical analysis) Scientific language, units and symbols (Scientific abbreviations and units in equations) Mathematical skills (Averages, equations, rearranging equations, angles, orders of magnitude, geometry)					
	Key assessments taking place:	Homeostasis and response assessment Energy changes assessment	MOCK PAPER 1 Rate and extent of chemical change assessment Forces assessment	Inheritance, variation and evolution Organic chemistry assessment Chemical analysis assessment Waves assessment	MOCK PAPER 2 Ecology assessment Chemistry of the atmosphere assessment Using resources assessment Magnetism assessment	GCSE PAPER 1	GCSE PAPER 2
	Key vocab	Hormones Reflex arc Reaction profiles Collision theory Scalar Vector	Mutation Natural selection Activation energy Reversible reaction Resultant Weight	Fossils Competition Alkanes Fractional distillation Transverse Longitudinal	Adaptation Carbon cycle Greenhouse effect Sustainability Attract Repel	See y10 keywords	See y11 keywords
	Opportunities for retrieval practice: Planned retrieval tasks throughout each unit KS3 retrieval tests Do now focussing on previous units						

Long Term Plan: Combined Science Foundation Tier

		Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
Year 11	Topics to be covered:	Physics: Forces Physics: Waves Physics: Magnetism	Chemistry: Rate and extent of chemical change Chemistry: Organic Chemistry Chemistry: Chemical analysis Chemistry: Chemistry of the atmosphere	Chemistry: Chemistry of the atmosphere Chemistry: Using resources Biology: Homeostasis and response Biology: Inheritance, variation and evolution	Biology: Inheritance, variation and response Biology: Ecology	REVISION	REVISION
	Skills to be developed:	Development of scientific thinking (Uses of models, applications, risks) Experimental skills and strategies (Developing hypothesis, planning experiments, working safely, sampling, making and recording observations.) Analysis and evaluation (Presenting data, mathematical analysis) Scientific language, units and symbols (Scientific abbreviations and units in equations) Mathematical skills (Averages, equations, rearranging equations, angles, orders of magnitude, geometry)					
	Key assessments taking place:	Forces assessment Waves assessment	MOCK PAPER 1 Magnetism assessment Rate and extent of chemical change assessment; Organic Chemistry assessment; Chemical analysis assessment	Chemistry of the atmosphere assessment Using resources assessment Homeostasis and response assessment	MOCK PAPER 2 Inheritance, variation and evolution assessment Ecology assessment	GCSE PAPER 1	GCSE PAPER 2
	Key vocab	Scalar Vector Transverse Longitudinal	Attract Repel Collision theory Fractional distillation	Greenhouse effect Sustainability Hormones Reflex arc	Mutation Natural selection Competition Adaptation	As y10 keywords	As y11 keywords
	Opportunities for retrieval practice: Planned retrieval tasks throughout each unit KS3 retrieval tests Do now focussing on previous units						

Long Term Plan: Biology

		Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
Year 11	Topics to be covered:	Homeostasis and response	Homeostasis and response Inheritance, variation and evolution	Inheritance, variation and evolution Ecology	Ecology	REVISION	REVISION
	Skills to be developed:	Development of scientific thinking (Uses of models, applications, risks) Experimental skills and strategies (Developing hypothesis, planning experiments, working safely, sampling, making and recording observations.) Analysis and evaluation (Presenting data, mathematical analysis) Scientific language, units and symbols (Scientific abbreviations and units in equations) Mathematical skills (Averages, equations, rearranging equations, angles, orders of magnitude, geometry)					
	Key assessments taking place:	Homeostasis and response assessment 1 (nervous system)	Homeostasis and response assessment (endocrine system)	Inheritance, variation and evolution assessment	MOCK PAPER 2 Ecology assessment	GCSE PAPER 1	GCSE PAPER 2
	Key vocab	Senses Reflex Arc Automatic Synapse	Hormone Glucagon Glycogen Endocrine	Mutation Variation Natural selection Genetic engineering	Competition Adaptation Deforestation Biogas	As y10 keywords	As y11 keywords
	Opportunities for retrieval practice: Planned retrieval tasks throughout each unit KS3 retrieval tests Do now focussing on previous units						

Long Term Plan: Chemistry

		Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
Year 11	Topics to be covered:	Rate and extent of chemical change	Organic Chemistry	Chemical analysis Chemistry of the atmosphere	Using resources	REVISION	REVISION
	Skills to be developed:	Development of scientific thinking (Uses of models, applications, risks) Experimental skills and strategies (Developing hypothesis, planning experiments, working safely, sampling, making and recording observations.) Analysis and evaluation (Presenting data, mathematical analysis) Scientific language, units and symbols (Scientific abbreviations and units in equations) Mathematical skills (Averages, equations, rearranging equations, angles, orders of magnitude, geometry)					
	Key assessments taking place:	Rate and extent of chemical change assessment	MOCK PAPER 1 Organic Chemistry assessment	Chemical analysis assessment	MOCK PAPER 2 Chemistry of the atmosphere assessment Using resources assessment	GCSE PAPER 1	GCSE PAPER 2
	Key vocab	Collision theory Activation energy Reversible reaction Equilibrium	Alkane Alkene Carboxylic acid Polymerisation	Positive ions Negative ions Chromatography Greenhouse effect	Sustainability Life cycle analysis Polymers Fertilisers	As y10 keywords	As y11 keywords
	Opportunities for retrieval practice: Planned retrieval tasks throughout each unit KS3 retrieval tests Do now focussing on previous units						

Long Term Plan: Physics

		Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
Year 11	Topics to be covered:	Waves	Magnetism and electromagnetism	Space Physics	REVISION	REVISION	REVISION
	Skills to be developed:	Development of scientific thinking (Uses of models, applications, risks) Experimental skills and strategies (Developing hypothesis, planning experiments, working safely, sampling, making and recording observations.) Analysis and evaluation (Presenting data, mathematical analysis) Scientific language, units and symbols (Scientific abbreviations and units in equations) Mathematical skills (Averages, equations, rearranging equations, angles, orders of magnitude, geometry)					
	Key assessments taking place:	Waves assessment	MOCK PAPER 1 Magnetism and electromagnetism assessment	Space physics assessment	MOCK PAPER 2	GCSE PAPER 1	GCSE PAPER 2
	Key vocab	Longitudinal Transverse Refraction Reflection	Motor effect Transformers Generator effect Induced	Life cycle of a star Orbital motion Satellites Red shift	As y11 keywords	As y10 keywords	As y11 keywords
	Opportunities for retrieval practice: Planned retrieval tasks throughout each unit KS3 retrieval tests Do now focussing on previous units						