

5-YEAR CURRICULUM PLAN



Curriculum at a Glance

Year 7

- 1. Fundamentals of Chemistry
- 2. Chemical Reactions
- 3. Forces and Space
- 4. Electricity
- 5. Cells and transport
- 6. The human Body

Year 8

- 1. The Periodic Table
- 2. Bonding
- 3. Energy
- 4. Waves
- 5. Plants
- 6. Genetics and Evolution

Year 9

- 1. Rates of Reaction
- 2. Earth and Atmosphere
- 3. Forces
- 4. Radiation
- 5. Cells and Transport
- 6. Organisation

Year 10

- 1. Atomic Structure and the periodic table
- 2. Quantitative and Chemical Change
- 3. Energy and Electricity
- 4. Particle model and radiation
- 5. Genetics and Homeostasis
- 6. Ecology

Year 11

- 1. Rates, Organic, Earth and Resources
- 2. Forces and Waves
- 3. Infection and Photosynthesis

5YR Curriculum Plan (Yr7-9)

Focus / Term	Half Term One	Half Term Two	Half Term Three	Half Term Four	Half Term Five	Half Term Six
<p>Year 7 Topic Covered and End Points</p>	<p>Working Scientifically 1. Naming apparatus, hazards, and risks of apparatus. 2. Variables 3. Representing Data 4. Mean, median, mode, range 5. Types of Data and Graphs 6. Types of Data and Graphs</p> <p>Chemistry – Fundamentals of Chemistry 7. States of matter and changes of state. 8. Pure and Impure Substances (Mean, median, mode, range, Graph Plotting) 9. History of the Atom 1 – Scientist and structure 10. History of the Atom 2 – Alpha scattering. 11. Atoms, elements, compounds and mixtures. 12. Investigating dissolving of salt in water - practical 13. Investigating dissolving of salt in water – graph and analysis 14. Separating mixtures – Filtration and crystallisation 15. Separating mixtures - Rock Salt 16. Separating mixtures - Rock Salt 17. Separating mixtures - Chromatography 18. Separating mixtures – Distillation</p>	<p>Chemistry - Chemical Reactions 1. The Periodic Table (groups and periods, metals/non-metals) 2. <i>Atomic mass and Number (PEN)</i> 3. Naming compounds 4. Chemical Equations. 5. Chemical and Physical Changes 6. Exothermic and Endothermic 7. Exothermic or Endothermic Practical 8. Exothermic or Endothermic Practical – graph and analysis. 9. Catalyst effects 10. Types of exothermic and endothermic reactions 11. pH scale/Acids and Alkalis/indicators 12. Simple neutralisation reaction 13. Reactions of acids with alkalis 14. Neutralisation practical – Temperature Change with acid and alkali – set up 15. Neutralisation practical – Temperature Change with acid and alkali – carry out 16. Neutralisation practical – Temperature Change with acid and alkali – analysis and graph</p>	<p>Physics - Forces 1. Day and Night 2. Seasons 3. Our Solar System 4. <i>Life cycle of stars 1</i> 5. <i>Life cycle of stars 2</i> 6. Satellites 7. Investigating orbital motion part 1 8. Investigating orbital motion part 2 – graphs 9. Gravity, mass and weight 10. $W = mg$ 11. 11. Contact and non-contact forces. 12. Resultant forces 13. Elastic and inelastic deformation 14. Hooke’s Law Practical – set-up 15. Hooke’s Law Practical – carry out 16. Hooke’s Law Practical – graph and analysis of results 17. Atmospheric pressure 18. Pressure in liquids 19. $P = F/A$ 20. Revision 21. Assessment</p>	<p>Physics - Electricity 1. Circuit Symbols 2. Series and Parallel circuits 3. Resistance 4. $V = IR$ 5. Static electricity 6. Electric fields 7. Magnetic fields (attract/repel) 8. Plotting magnetic fields 9. Earth’s Magnetism 10. Electromagnets 11. Electromagnets investigation (number of coils) 12. Electromagnets investigation (number of coils) 13. Uses of electromagnets 14. Revision 15. Assessment</p>	<p>Biology – Topic 1 Cells and Transport 1. Prokaryotes and eukaryotes 2. Animal Cells 3. Plant Cells 4. Microscopy 5. Microscopy Practical 6. Specialised Animal Cells 7. Specialised Plant Cells 8. Stem Cells 9. Diffusion 10. Osmosis 11. Active Transport 12. Surface area to volume ratio. 13. Revision 14. Revision/ Assessment Topic 2 – The Human Body 15. The Skeleton 16. Levels of organisation 17. Digestive System 1 18. Digestive System 2</p>	<p>Biology - Topic 2 – The Human Body 1. Enzyme structure 2. Digestive Enzymes 3. Villi 4. Healthy diet/ imbalances in diet 5. Food Tests 1 6. Food Tests 2 (midpoint) 7. The Lungs and Lung volume 8. Lung volume practical 9. The alveoli 10. Asthma and smoking 11. Drugs and alcohol 12. Aerobic Respiration 13. Anaerobic Respiration in humans and micro-organisms 14. Exercise 15. Effect of exercise practical 16. Oxygen Debt Practical 17. Metabolism and energy (SI units) 18. Revision 19. Revision 20. Revision 21. Assessment</p>

	19. Revision 20. Revision 21. Assessment	17. Reactions of acids with metals 18. Revision 19. Revision 20. Revision 21. Assessment				
NC	Working Scientifically The particulate nature of matter Pure and Impure substances Atoms elements and compounds	Energetics The Periodic Table Atoms, elements and compounds Chemical reactions	Motion and forces Space Physics	Electricity and electromagnetism	Cells and organisation Nutrition and digestion The skeletal and muscular system	Cellular respiration Nutrition and digestion Gas exchange systems Health
Powerful Knowledge and Careers	Brownian Motion and Particle discovery		Powers of ten – The scale of the universe	Life without electricity	The microscopic world	Vegans vs carnivores- life span?
Tier 3 Words	Discrete Continuous Risk Hazard Proton Neutron Electron Positive Negative Neutral Vacuum Kinetic Energy Atom Element Compound Mixture Chromatography Distillation Stationary Phase Mobile Phase Solvent Solute Solution Boiling Melting Evaporating Condensing Sublimation	Group Period Reactivity Halogen Alkali Metals Transition elements Noble Gases Exothermic Endothermic Acid Alkali Indicator Neutral PH Scale Catalyst Thermal	Acceleration Deceleration Gradient Relativity Newton Friction Air Resistance Velocity Moments Perpendicular Balanced Equilibrium Upthrust Moment Pascal Work Done Elastic Inelastic Satellite Moon Planet Star Galaxy Comet Asteroid Orbit Elliptical Deformation	Magnetic Field Electric Field Electromagnet Solenoid Pole Compass Current Amps Potential Difference Volts Charge Electron Negative Positive Conventional Current Conductor Insulator Ammeter Voltmeter Series Parallel Resistance Ohms	Cytoplasm Membrane Mitochondria Respiration Multicellular Unicellular Flagellum Vacuole Nucleus Prokaryotic Eukaryotic Plasmid Aerobic Diffusion Osmosis Digestion Emulsification Faeces Egestion Enzymes Proteins Carbohydrates Oesophagus Intestine Pancreas Bile Skeletal	Absorption Mitochondria Aerobic Anaerobic Villi Lipase Protease Carbohydrase Active Site Denature Trachea Bronchi Bronchioles Alveoli Lipids Proteins Amino-Acids Obesity Scurvy Deficiency Iodine Biuret Benedicts

	Temperature Condenser Fractional		Gravity Nebula Fusion White Dwarf Red Giant Neutron Star Black Hole Supernova			
Long Term Retrieval	KS2 Chemistry Topics:	<ul style="list-style-type: none"> Working Scientifically 1 the particulate nature of matter Pure and Impure substances Atoms elements and compounds 	<ul style="list-style-type: none"> KS2 Physics Topics: Energetics The Periodic Table Atoms, elements and compounds Chemical reaction 	<ul style="list-style-type: none"> Working Scientifically 1 the particulate nature of matter Pure and Impure substances Atoms elements and compounds Motion and forces Space Physics 	<ul style="list-style-type: none"> KS2 Physics Topics: Energetics The Periodic Table Atoms, elements and compounds Chemical reaction Electricity and electromagnetism 	<p>Cells and transport</p> <ul style="list-style-type: none"> Working Scientifically 1 the particulate nature of matter Pure and Impure substances Atoms elements and compounds Motion and forces Space Physics Cells and organisation <ul style="list-style-type: none"> Nutrition and digestion The skeletal and muscular system
Assessment Details	Initial: 20 Mark Hinge (Self Assessed) Mid: 30 Mark Written (Self Assessed) End: 30 Mark (Teacher Assessed)	Initial: 20 Mark Hinge (Self Assessed) Mid: 30 Mark Written (Self Assessed) End: 30 Mark (Teacher Assessed)	Initial: 20 Mark Hinge (Self Assessed) Mid: 30 Mark Written (Self Assessed) End: 30 Mark (Teacher Assessed)	Initial: 20 Mark Hinge (Self Assessed) Mid: 30 Mark Written (Self Assessed) End: 30 Mark (Teacher Assessed)	Initial: 20 Mark Hinge (Self Assessed) Mid: 30 Mark Written (Self Assessed) End: 30 Mark (Teacher Assessed)	Initial: 20 Mark Hinge (Self Assessed) Mid: 30 Mark Written (Self Assessed) End: 30 Mark (Teacher Assessed) End of year mock: 60 Marks (teacher assessed)
Misconceptions		Neutrons are negative PEN / PNE	Why we have day and night Sun as a star Newtons first Law	All metals are magnetic Magnetic north is a north pole Current is used up as you go round a circuit	Mitochondria make energy Nucleus is the brain of the cell Cell membrane vs cell wall	Respiration is breathing
Homework	Homework booklet: Fundamentals of Chemistry	Homework booklet: Chemical Reactions	Homework booklet: Forces and space	Homework booklet: Electricity and electromagnetism	Homework booklet Cells and Transport	Homework booklet: The Human Body

<p>Year 8 Topic Covered and End Points</p>	<p>Working Scientifically 1. Prediction and Hypothesis 2. Planning an Investigation – Method 3. Types of error 4. Uncertainty 5. Analysing data 6. Drawing conclusions</p> <p>Chemistry - The Periodic Table 7. Electron configuration 8. Formation of ions 9. Balancing Equations 10. Balancing Equations 11. History of the Periodic Table 12. Properties of metals 13. Group 1 – Trends and Properties 14. Group 1 – Reactions with oxygen and chlorine. 15. Group 1 – reactions with water 16. Group 0 17. Group 7 – Trends and properties 18. Group 7 – Displacement 19. Group 7 – Displacement</p>	<p>Chemistry: Bonding 1. <i>Ionic Bonding</i> 2. <i>Ionic Bonding</i> 3. <i>Metallic bonding</i> 4. <i>Covalent bonding</i> 5. <i>Covalent bonding</i> 6. <i>Hydrocarbons and crude oil</i> 7. <i>Alkanes</i> 8. <i>Alkenes</i> 9. <i>Properties of hydrocarbons</i> 10. <i>Fractional Distillation of hydrocarbons</i> 11. Complete and incomplete combustion of hydrocarbons (balancing) 12. Complete and incomplete combustion of hydrocarbons (balancing) 13. Pollution from fuels 14. <i>Gas tests</i> 15. <i>Flame tests</i></p>	<p>Physics: Energy 1. Energy types and conservation 2. Energy transfers 3. Power 4. $E = P \times t$ 5. Work done 6. Conduction 7. Convection 8. Insulation Practical – method and variables 9. Insulation Practical – carry out 10. Insulation Practical – graph and analysis (JUSTIFY) 11. Radiation 12. Internal Energy 13. Heating and cooling graphs 14. Heating and cooling graphs 15. Changes of state 16. Density in states of matter 17. Calculating density</p>	<p>Physics: Waves Transverse and longitudinal waves 2. Properties of Sound waves 3. Detecting Sound 4. Ultrasound 5. Properties of Light waves 6. Reflection 7. Imaging in mirrors 8. Refraction 9. Human Eye 10. Lenses 11. Colour 12. Colour 13. Revision 14. Revision 15. Assessment</p>	<p>Biology: Plants 1. Plant Reproduction/ structure of flower 2. Seed Dispersal 3. Seed and Gene Banks 4. Photosynthesis 5. Structure of the Leaf 6. Structure of the Leaf and Stomata 7. Limiting Factors of Photosynthesis (graphs) 8. Rate of Photosynthesis Practical Part 1 9. Photosynthesis Practical Part 2 10. Translocation 11. Testing a leaf for starch 12. Factors affecting transpiration</p>	<p>Biology: genetics and evolution 1. Puberty 2. Male and female reproductive organs 3. Menstrual Cycle with hormones 4. Sexual vs Asexual reproduction 5. Structure of DNA 6. History of DNA 7. Alleles 8. Punnett Squares 9. Variation (graphs) 10. Variation (graphs) 11. Darwin and Doudna 12. Natural Selection 13. Competition and Interdependence 14. Bioaccumulation 15. Adaptations Part 1 16. Adaptations Part 2 17. Biodiversity 18. <i>Maintaining Biodiversity</i> 19. Extinction</p>
<p>NC</p>	<p>Working Scientifically The Periodic table Atoms, Elements and compounds</p>	<p>Chemical reactions</p>	<p>Energy Matter</p>	<p>Waves</p>	<p>Reproduction Material cycles and energy</p>	<p>Relationships in an ecosystem Genetics</p>
<p>Powerful Knowledge and Careers</p>	<p>History of the periodic table</p>	<p>Mans impact on the environment Carbon Monoxide the silent killer</p>	<p>Conservation of energy</p>	<p>Pinhole Camera How we see colour</p>	<p>Life without plants</p>	<p>History of DNA Misconceptions of evolution</p>

Tier 3 Vocab	Proton Neutron Electron Vacuum Transition Element Oxide Chloride Flouride Halide Alkali Reactivity Displacement Halogen Shielding Sonorous Malleable Ductile Ionised Positive Negative	Homologous Graphite Graphene Fullerene Alkane Alkene hydrogenated Plankton Oxidised Electron Shell Distillation Smog Particulates Pressure Finite Non-renewable	Work Done Conservation Dissipated Thermal Kinetic Gravitational Elastic Electrical Chemical Joule Conductivity Latent Displacement Volume Power Conduction Convection Radiation Density	Oscillation Ultrasound Ossicles Auditory Vacuum Diffuse Specular Cornea Iris Suspensory Ligament Retina Lens Medium Normal	Ovule Pollen Dispersal Pollination Stamen Anther Filament Pollen Epidermis Palisade Translocation Transpiration Xylem Phloem Endothermic Mesophyll Cuticle Germination	Progesterone Oestrogen Luteinising Hormone Follicle Ovary Urethra Fallopian Duct Double Helix Polymer Nucleotide Base Pair Clone Meiosis Mitosis Variation Evolution Adaptation Homozygous Heterozygous Phenotype Genotype
Long Term Retrieval	<ul style="list-style-type: none"> • Motion and forces • Space Physics • Cells and organisation • Nutrition and digestion • The skeletal and muscular system • Cellular respiration • Nutrition and digestion • Gas exchange systems • Health 	<ul style="list-style-type: none"> • Working Scientifically • the particulate nature of matter • Pure and Impure substances • Atoms elements and compounds • The periodic table 	<ul style="list-style-type: none"> • Working Scientifically • the particulate nature of matter • Pure and Impure substances • Atoms elements and compounds • The periodic table • 	<ul style="list-style-type: none"> • Motion and forces • Space Physics • Cells and organisation • Nutrition and digestion • The skeletal and muscular system • Cellular respiration • Nutrition and digestion • Gas exchange systems • Health • Physics - energy 	<ul style="list-style-type: none"> • Working Scientifically • the particulate nature of matter • Pure and Impure substances • Atoms elements and compounds • The periodic table • Working Scientifically • the particulate nature of matter • Pure and Impure substances • Atoms elements and compounds • The periodic table • Physics Waves 	<ul style="list-style-type: none"> • Motion and forces • Space Physics • Cells and organisation • Nutrition and digestion • The skeletal and muscular system • Cellular respiration • Nutrition and digestion • Gas exchange systems • Health • Physics – energy • Plants

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Misconceptions			Energy can be created and destroyed	In waves the medium moves not the energy	Plants get food from the soil	Evolution has a goal Humans evolved from monkeys
Homework	Homework booklet: The Periodic Table	Homework booklet: Bonding	Homework booklet: Energy	Homework booklet: Waves	Homework booklet: Plants	Homework booklet: Genetics and Evolution
Year 9 Topic Covered and End Points	Working Scientifically 1. Theory vs Law 2. Bias and Peer Review 3. Repeatability vs Reproducibility. 4. Interrogate resources/journals 5. Interrogate resources/journals 6. Interrogate resources/journals Chemistry - 15 lessons Rates of Reactions 7. Exothermic and Endothermic Reactions 8. Factors that affect rates of reactions 9. Factors that affect rates of reaction 10. Rate graphs 11. Using graphs to calculate rate of reaction 12. Iodine clock practical – set up 13. Iodine clock practical – carry out	Chemistry Earth and the Atmosphere 1. Earth structure and composition – rock types and rock cycle 2. Earths resources 3. Potable Water 4. Wastewater treatment 5. Ceramics, composites, and polymers 6. Recycling 7. Extracting metals with displacement/ reactivity series 8. Extracting metals with displacement/ reactivity series 9. Earth’s atmosphere (pie charts) 10. Changes to the Earth’s atmosphere. 11. Fossil fuels 1 12. Fossil fuels 2 13. Greenhouse effect 1 14. Greenhouse effect 2 15. Climate change	Physics – Forces 1. Scalar and Vectors 2. Calculating speed 3. Maggot racing 4. Maggot racing 5. d/t graphs 6. d/t graphs 7. v/t graphs 8. v/t graphs 9. Acceleration 10. Newtons 1 st Law 11. Newtons 2 nd Law 12. Newtons 3 rd Law 13. Acceleration (ramp practical) 14. Acceleration (ramp practical) 15. Acceleration (ramp practical)	Physics – Radiation 1. Transverse and longitudinal waves 2. Electromagnetic spectrum 3. Uses of EM waves 4. Alpha, beta, gamma 5. Nuclear equations 6. Half-life 7. Nuclear fusion 8. Nuclear fission 9. Nuclear fission 10. Reducing risks of radiation 11. Uses of radiation 12. Chernobyl – interrogating resources 13. Chernobyl – interrogating resources	Biology - Cells 1. Eukaryotes, prokaryotes, animal cells and plant cells. 2. Size of cells and order of magnitude 3. Stem cells 4. Specialised animal cells 5. Specialised plant cells 6. Microscopy 7. RP – microscopy 8. RP - microscopy 9. Mitosis 10. Diffusion 11. Surface area to volume ratio 12. Osmosis 13. RP - Osmosis 14. RP - Osmosis 15. Active transport 16. Assessment. 17. Digestive system and enzymes 18. Enzyme activity	Biology – Organisation 1. RP – Enzyme Activity 2. RP – Enzyme Activity 3. RP – Food test 4. RP – Food test. 5. The Heart 6. Arteries, veins and capillaries, AND blood. 7. Cardiovascular disease 8. Villi and Alveoli 9. Cancer 10. Communicable and non-communicable disease 11. Correlating risk factors 12. Lifestyle and disease 13. Plant tissues 14. Transpiration and Translocation 15. Factors affecting transpiration

	14. Iodine clock practical – analysis and graphs 15. Investigating how surface area affects ROR. 16. Investigating how surface area affects ROR. 17. Investigating how surface area affects ROR.	16. Carbon cycle part 1 17. Carbon cycle part 2				
NC / AQA	Working Scientifically Chemical Reaction	Materials Earth and Atmosphere	Forces and motion	<u>Waves</u>	B1	B1
Powerful Knowledge and Careers	How scientific ideas are validated?	History of the formation of the earth and the moon Extinction of the dinosaurs Impact of climate change	Scalars and vectors Terminator 2 v/t analysis	How the Chernobyl disaster occurred and the impact over time	Ethics of stem cells	What will I die from?
Tier 3 Vocab	Observation Hypothesis Peer-review Prediction Bias Ethics Collision Surface-Area Rate Concentration Pressure Catalyst Frequency Syringe Precipitate Mass Balance Tangent Reactant Product	Combustion Filtration Sedimentation Sterilisation Wavelength Absorption Reverse Osmosis Membrane Particulates Hydrocarbons Carbon Monoxide Carbon Dioxide Algae Condensed Sedimentary Igneous Metamorphic Impurity	Equilibrium Balanced Equal Opposite Scalar Vector Bearing Magnitude Force Velocity Temperature Displacement Distance Contact Speed Attraction Repulsion Accelerate Decelerate Gradient Stationary Terminal Velocity	Alpha Beta Gamma Irradiation Contamination Count Rate Becquerel Unstable Penetration Ionisation Radioactivity Half-life Mutation Cancer	Magnification Nucleus Plasmid Prokaryotic Eukaryotic DNA Specialised Concentration Gradient Energy Diffusion Bone Marrow Ethical Osmosis Permeable Membrane Minerals Molecules Meristem Embryonic Clone Differentiated Undifferentiated Neurone Mitochondria Multicellular Flagellum Resolution	Atrium Ventricle Aorta Vena Cava Pulmonary Oxygenated Cardiovascular Exposure Deoxygenated Stent Statin Cholesterol Cardiac Oxygen Villi Villus Capillary Lumen Exchange Surface Artery Vein Haemoglobin Immune Antibodies Antitoxin Phagocytosis Plasma

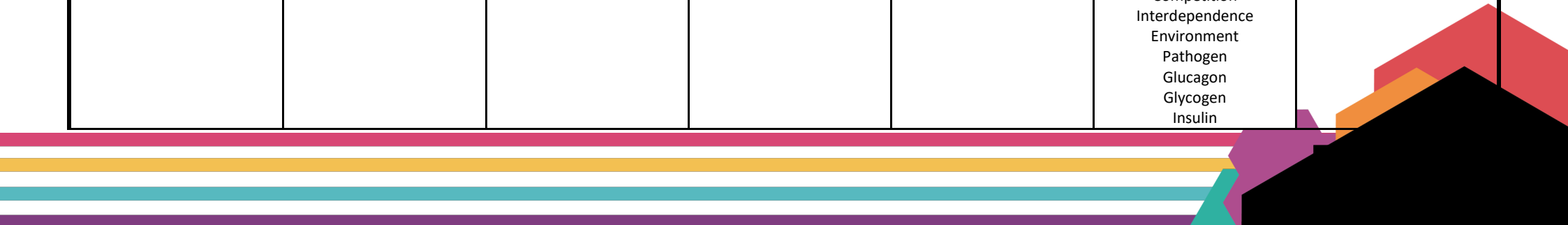
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Misconceptions			Speed and velocity Distance and displacement	Radiation causes cancer not increases the probability	Gaps in solids liquids and gases increases linearly Meiosis vs Mitosis	Biurets and benedict's Smoking causes cancer
Homework	Homework booklet: Rates of Reaction	Homework booklet: Earth and the Atmosphere	Homework booklet: Forces	Homework booklet: Radiation	Homework booklet: B1 Part 1 -Cells	Homework booklet: B1 Part 2 - Organisation

5YR Curriculum Plan Yr10-11

Focus / Term	Half Term One	Half Term Two	Half Term Three	Half Term Four	Half Term Five	Half Term Six
Year 10 Topic Covered and End Points	C1 Atomic structure and periodic table 1. Elements, compounds and mixtures. 2. Interpreting chemical formula 3. Filtration and Crystallisation 4. Simple Distillation 5. Fractional Distillation 6. Chromatography 7. Alpha Scattering 8. Nuclear Model 9. Atomic Number/Mass mass and RAM (2) 10. Electron structure 11. Development of periodic table 12. Group 0 13. Metals 14. Group 1(2)	C1 1. Calculating moles of an element AND a compound (H) 2. Calculating mass of a number of moles (H) 3. Using moles to balance equations (H) 4. Avogadro's constant (2) (H) 5. Reacting masses (2) (H) 6. Limiting reactant (2) (H) 7. Concentration of solutions 8. <i>Assessment</i> Chemical Changes 9. Reactivity of metals AND reactivity series (2) 10. Extraction of metals 11. Oxidation and reduction 12. Acids and Alkalis 13. Acids and metals (2)	P1 1. Energy Transfers in a pendulum / bungee jumper 2. Kinetic Energy 3. Gravitational Potential Energy 4. Elastic Potential Energy 5. Specific Heat Capacity 6. RP 1 – Specific Heat Capacity 7. RP 1 – Specific Heat Capacity 8. Work done by a force 9. Calculating Power 10. Efficiency 11. Cooling of buildings 12. Energy from fossil fuels 13. Nuclear Energy 14. UK Energy Mix 15. Renewable Energy Resources 16. Renewable energy resources	P1 1. National grid 2. <i>Assessment</i> Particle Model of Matter 3. Density 4. RP 5 – Density 5. RP 5 – Density 6. Internal Energy AND Heating and cooling graphs 7. Specific Latent Heat 8. Particle motion in gases ATOMIC STRUCTURE 9. Atomic Structure (Atomic mass and number/alpha scattering skipped due to being covered in C1) 10. Radioactivity. 11. Properties of alpha, beta and gamma. 12. Nuclear equations 13. Half-life 14. Half-life practical	B2 1. Sexual and asexual reproduction 2. Meiosis and fertilisation 3. DNA and the Genome 4. Alleles 5. Cystic Fibrosis 6. Polydactyly 7. Family Trees 8. Inheritance of Sex 9. Variation 10. Evolution by natural selection 11. Selective Breeding 12. Genetic Engineering 13. Fossils 14. Antibiotic resistance 15. Classification 16. Assessment 17. Homeostasis 18. Nervous System 19. RP 7 – Reaction time 20. RP 7 – Reaction time	B2 – 35 lessons 1. Food chains and predator prey cycles 2. Sampling organisms AND mean, median and mode. 3. RP 9 – Sampling organisms 4. RP 9 – Sampling organisms 5. RP 9 – Sampling techniques – mid-point 6. The Carbon Cycle 7. The Water Cycle 8. Biodiversity 9. Waste management 10. Land use 11. Global warming 12. Maintaining biodiversity

	15. Group 7 (2) 16. Group 7 17. <i>Assessment</i> Structure and Bonding 18. States of matter 19. Ionic bonding (2) 20. Properties of ionic bonding 21. Covalent bonding (2) 22. Covalent bonding 23. Properties of small covalent compounds 24. Diamond and Silicon Dioxide 25. Graphite 26. Graphene and Fullerenes 27. Bonding in polymers 28. Metals and Alloys 29. Limitations of bonding 30. Assessment Quantitative 31. Conservation of mass 32. Charges of ions and formula of ionic compounds 33. Relative Formula Mass / Calculating percentage by mass 34. Relative Formula Mass / Calculating percentage by mass 35. Calculating moles of an element AND a compound	14. Three reactions of acids 15. RP1 – Soluble Salts 16. RP1 – Soluble Salts 17. Strong and weak acids 18. Introducing electrolysis 19. Electrolysis of Aluminium oxide 20. Electrolysis of Aqueous Solutions (2) 21. RP 3– Electrolysis 22. RP 3 – Electrolysis 23. <i>Assessment</i> 24. Exothermic and Endothermic 25. Bond energy calcs 26. Bond energy calcs 27. RP – Temperature changes 28. RP – Temperature changes	17. <i>Assessment.</i> 18. Current in series AND current in parallel 19. Potential difference in series AND parallel 20. Potential Difference in batteries 21. Charge in circuits 22. Calculating energy transfers 23. Resistance and Resistors 24. Resistance in a filament lamp 25. Diodes and LED 26. Resistors in series and parallel 27. LDRS's 28. Thermistor 29. RP 3 – Resistance 30. RP 3 – Resistance 31. RP 4 – VI Characteristics 32. Energy transfer in Appliances AND calculating energy transfers 33. Power of components 34. AC/DC 35. Mains Electricity	15. Irradiation and contamination 16. <i>Revision</i> 17. <i>Revision</i> 18. <i>Revision</i> 19. <i>Revision</i>	21. Endocrine system 22. Controlling blood glucose 23. The Menstrual Cycle 24. Contraception 25. Hormones to treat infertility (H) 26. Negative feedback (H) 27. Assessment 28. Competition and interdependence 29. Biotic and abiotic factors 30. Adaptations	
AQA	C1	C1	P1	P1	B2	B2
Powerful Knowledge and Careers	Just how small is an atom?	What is a mole?	Pendulum Energy changes Energy changes in an old house	The most painful death on earth	Can humans reproduce asexually?	Polar bear habitat – climate change
Tier 3 Vocab	Element Compound Molecule Mixture Chromatography Stationary Phase	Mole Mass Concentration Constant Acid Alkali	Current Amps Potential Difference Volts Charge Electron	Alpha Beta Gamma Irradiation Contamination Count Rate	Progesterone Oestrogen Luteinising Hormone Follicle Ovary Urethra	Predator Prey Consumer Producer Trophic Omni

	Mobile Phase Filtration Solvent Solute Solution Crystallisation Distillation Vacuum Deflection Reflection Relative Mass Noble gas Halogen Halide Free Electron Fullerene Polymer Covalent Delocalised Ionic lattice Intermolecular Melting Boiling Conservation Positive Strong Weak Bond Formula Electron Shell Mass Number Atomic Number Conduction Charge Nanotube	Base Indicator Hydroxide Carbonate Insoluble Neutralisation Ion Oxidation Reduction Displacement Electrolyte Anode Cathode Exothermic Endothermic	Negative Positive Conventional Current Conductor Insulator Ammeter Voltmeter Series Parallel Resistance Ohms Thermal Conductivity Decommission Directly proportional Ohmic Power	Becquerel Unstable Penetration Ionisation Radioactivity Half-life Mutation Cancer Mass Volume Latent Vaporisation Condensation Pressure Collisions Irregular Collide	Fallopian Duct Double Helix Polymer Nucleotide Base Pair Clone Meiosis Mitosis Variation Evolution Adaptation Homozygous Heterozygous Phenotype Genotype Fertilisation Gamete Recessive Genome Dominant Allele Menstruation Uterus Selective Breeding Natural Selection Embryo Neurone Motor Synapse Sensory Reflex Relay Hormone Insulin Diabetes Barrier Biotic Abiotic Competition Interdependence Environment Pathogen Glucagon Glycogen Insulin	Herbivore Carnivore Primary Secondary Tertiary Population Community Predator Prey Ecosystem Habitat Quadrat Organism Respiration Decomposer Photosynthesis Extremophile Precipitate Aquifer Evaporate Microorganism Biodiversity Decay Deforestation
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					Pancreas	
Long Term Retrieval	<ul style="list-style-type: none"> Working Scientifically the particulate nature of matter Pure and Impure substances Atoms elements and compounds The periodic table Working Scientifically the particulate nature of matter Pure and Impure substances Atoms elements and compounds The periodic table Physics Waves Genetics and evolution The earth and the atmosphere Radiation Organisation GCSE 	<ul style="list-style-type: none"> Motion and forces Space Physics Cells and organisation Nutrition and digestion The skeletal and muscular system Cellular respiration Nutrition and digestion Gas exchange systems Health Physics – energy Plants Rates of Reaction Forces Cells GCSE Periodic Table GCSE Bonding GCSE 	<ul style="list-style-type: none"> Working Scientifically the particulate nature of matter Pure and Impure substances Atoms elements and compounds The periodic table Working Scientifically the particulate nature of matter Pure and Impure substances Atoms elements and compounds The periodic table Physics Waves Genetics and evolution The earth and the atmosphere Radiation Organisation GCSE Quantitative GCSE Chemical Change GCSE 	<ul style="list-style-type: none"> Motion and forces Space Physics Cells and organisation Nutrition and digestion The skeletal and muscular system Cellular respiration Nutrition and digestion Gas exchange systems Health Physics – energy Plants Rates of Reaction Forces Cells GCSE Periodic Table GCSE Bonding GCSE Energy GCSE Electricity GCSE 	<ul style="list-style-type: none"> Working Scientifically the particulate nature of matter Pure and Impure substances Atoms elements and compounds The periodic table Working Scientifically the particulate nature of matter Pure and Impure substances Atoms elements and compounds The periodic table Physics Waves Genetics and evolution The earth and the atmosphere Radiation Organisation GCSE Quantitative GCSE Chemical Change GCSE Particle Model GCSE Radiation GCSE 	<ul style="list-style-type: none"> Motion and forces Space Physics Cells and organisation Nutrition and digestion The skeletal and muscular system Cellular respiration Nutrition and digestion Gas exchange systems Health Physics – energy Plants Rates of Reaction Forces Cells GCSE Periodic Table GCSE Bonding GCSE Energy GCSE Electricity GCSE Genetics GCSE Evolution GCSE
Assessment details	Initial: 20 Mark Hinge (Self Assessed) Mid: 30 Mark Written (Self Assessed) End: 45 Mark (Teacher Assessed)	Initial: 20 Mark Hinge (Self Assessed) Mid: 30 Mark Written (Self Assessed) End: 45 Mark (Teacher Assessed) C1 Mock – Qualification dependant	Initial: 20 Mark Hinge (Self Assessed) Mid: 30 Mark Written (Self Assessed) End: 30 Mark (Teacher Assessed)	Initial: 20 Mark Hinge (Self Assessed) Mid: 30 Mark Written (Self Assessed) End: 30 Mark (Teacher Assessed) P1 Mock – Qualification dependant	Initial: 20 Mark Hinge (Self Assessed) Mid: 30 Mark Written (Self Assessed) End: 30 Mark (Teacher Assessed)	Initial: 20 Mark Hinge (Self Assessed) Mid: 30 Mark Written (Self Assessed) End: 30 Mark (Teacher Assessed) B2 Mock – Qualification dependant

Misconceptions		Refraction explanation vs required practical description	All bacteria have negative consequences Antibiotics kill viruses	Gamma is most ionising type of radiation		Fungi are plants Arrows in food chains
Homework	Homework booklet: C1 part one: The periodic table and bonding	Homework booklet: C1 part 2: Quantitative and chemical change	Homework booklet: P1 part 1: Energy and electricity	Homework booklet: P1 Part 2: Particle Model and Radiation	Homework booklet: B2 part 1: Genetics and Homeostasis	Homework booklet B2 part 2: Ecology
Year 11 Topic Covered and End Points	<p>C2 – 35 lessons</p> <p>Rate of Reaction</p> <ol style="list-style-type: none"> 1. Mean rate of reaction 2. Using tangents to determine rate (H) 3. Effect of concentration on ROR 4. RP 5 – Rates of Reaction 5. RP 5 – Rates of reaction 6. Effect of surface area on ROR AND temperature AND catalyst. 7. Reversible Reactions 8. Concentration and Rate of Reaction AND pressure and rate of reaction. (H) 9. Temperature and rate of reaction. (H) <p>ORGANIC CHEM</p> <ol style="list-style-type: none"> 10. Crude oil and hydrocarbons 11. Properties of hydrocarbons 12. Combustion of hydrocarbons. 13. Fractional distillation 14. Cracking. 15. <i>Assessment</i> <p>CHEMICAL ANALYSIS</p> <ol style="list-style-type: none"> 16. Purity and formulation 17. Chromatography 18. RP - Chromatography 19. Gas tests <p>EARTHS ATMOSPHERE</p> <ol style="list-style-type: none"> 20. The Atmosphere 21. Fossil Fuels 	<p>P2 – 35 lessons</p> <ol style="list-style-type: none"> 1. Scalars and vector AND contact and non-contact forces 2. Gravity and weight 3. Resultant forces 4. Vector diagrams (H) 5. Vector diagrams (H) 6. Resolving forces (H) 7. Resolving forces (H) 8. Work done and energy transfer 9. Forces and elasticity 10. RP 6 – Stretching a spring 11. RP 6 – Stretching a spring 12. Speed 13. Velocity 14. Distance/time graphs 15. Acceleration 16. Acceleration 2 17. Newtons 1st Law 18. Newtons 2nd Law 19. Newtons 3rd Law 20. RP 7 – Acceleration 21. RP 7 – Acceleration 22. Vehicle stopping distance 23. Forces and braking 24. Momentum (H) 25. <i>Assessment</i> 26. Transverse and longitudinal 27. Properties of waves 	<p>2 – 35 lessons</p> <ol style="list-style-type: none"> 1. RP 10 – Infrared 2. RP 10 – Infrared 3. Permanent and induced magnets 4. Magnetic fields 5. Electromagnets 6. The Motor effect (H) 7. Electric Motor (H) 8. <i>Revision</i> 9. <i>Revision</i> 10. <i>Revision</i> 11. <i>Revision</i> 12. <i>Revision</i> 13. <i>P2 MOCK</i> 14. Pathogens, measles and HIV 15. Salmonella and gonorrhoea AND malaria 16. Non-specific defences 17. Immune system 18. Vaccination 19. Infectious diseases in plants 20. Antibiotic 21. Testing medicines 22. Photosynthesis 23. RP 6 – Photosynthesis 24. RP 6 - Photosynthesis 25. Limiting factors 26. Limiting factors 27. Respiration 28. Exercise 			

	22. Greenhouse effect 23. Climate change AND carbon footprint 24. Pollutants from fuels USING RESOURCES 25. Using Earth's resources 26. RP – Water 27. RP – Water 28. Potable Water AND Wastewater 29. Alternative method of extracting metals (H) 30. Life Cycle Assessments 31. Recycling	28. Wave equation 29. RP 8 – Ripple Tank 30. RP 8 – Ripple Tank 31. RP 8 – Waves in a solid 32. RP 8 – Waves in a solid 33. EM waves 34. Uses of EM waves 35. Refraction of waves	29. Metabolism			
AQA	C2	P2	B2			
Powerful Knowledge and Careers	N/A	N/A	N/A			
Tier 3 Vocab	Collision Surface-Area Rate Concentration Pressure Catalyst Frequency Syringe Precipitate Mass Balance Tangent Reactant Product Cracking Volatility Flammability Particulates Smog Wavelength Precipitate Homologous Graphite Graphene Fullerene Alkane Alkene	Equilibrium Balanced Equal Opposite Scalar Vector Bearing Magnitude Force Velocity Temperature Displacement Distance Contact Speed Attraction Repulsion Accelerate Decelerate Gradient Stationary Terminal Velocity Oscillation X-ray Perpendicular Parallel	Photosynthesis Metabolism Communicable Disease Vector Vaccine Bacteria Virus Antibiotic Protist Mucus Cillia Discharge Phagocytosis Pathogen Trachea Bronchi Immunity Antigen Antitoxin Aspirin Clinical Double Blind Optimum Digitalis Penicillin			

	<p>hydrogenated Plankton Oxidised Electron Shell Distillation Smog Particulates Pressure Finite Non-renewable Combustion Filtration Sedimentation Sterilisation Wavelength Absorption Reverse Osmosis Membrane Particulates Hydrocarbons Carbon Monoxide Carbon Dioxide Algae Condensed Sedimentary Igneous Metamorphic Impurity</p>	<p>Parallax Transverse Longitudinal Reflection Refraction Ionosphere Frequency Wavelength Hertz Thinking distance Braking Distance</p>	<p>Chlorophyll Chloroplast Limiting Factor Glycogen Glucose Cellulose Lipid Enzyme</p>			
Long Term Retrieval	<ul style="list-style-type: none"> Working Scientifically the particulate nature of matter Pure and Impure substances Atoms elements and compounds The periodic table Working Scientifically the particulate nature of matter Pure and Impure substances 	<ul style="list-style-type: none"> Motion and forces Space Physics Cells and organisation Nutrition and digestion The skeletal and muscular system Cellular respiration Nutrition and digestion Gas exchange systems Health 	<ul style="list-style-type: none"> Working Scientifically the particulate nature of matter Pure and Impure substances Atoms elements and compounds The periodic table Working Scientifically the particulate nature of matter Pure and Impure substances 	<ul style="list-style-type: none"> Motion and forces Space Physics Cells and organisation Nutrition and digestion The skeletal and muscular system Cellular respiration Nutrition and digestion Gas exchange systems Health 		

	<ul style="list-style-type: none"> • Atoms elements and compounds • The periodic table • Physics Waves • Genetics and evolution • The earth and the atmosphere • Radiation • Organisation GCSE • Quantitative GCSE • Chemical Change GCSE • Particle Model GCSE • Radiation GCSE • Ecology GCSE 	<ul style="list-style-type: none"> • Physics – energy • Plants • Rates of Reaction • Forces • Cells GCSE • Periodic Table GCSE • Bonding GCSE • Energy GCSE • Electricity GCSE • Genetics GCSE • Evolution GCSE • Organic GCSE • Rates GCSE • Chemical Analysis GCSE • Atmosphere GCSE • Earth's Resources GCSE 	<ul style="list-style-type: none"> • Atoms elements and compounds • The periodic table • Physics Waves • Genetics and evolution • The earth and the atmosphere • Radiation • Organisation GCSE • Quantitative GCSE • Chemical Change GCSE • Particle Model GCSE • Radiation GCSE • Ecology GCSE • Forces GCSE • Waves GCSE 	<ul style="list-style-type: none"> • Physics – energy • Plants • Rates of Reaction • Forces • Cells GCSE • Periodic Table GCSE • Bonding GCSE • Energy GCSE • Electricity GCSE • Genetics GCSE • Evolution GCSE • Organic GCSE • Rates GCSE • Chemical Analysis GCSE • Atmosphere GCSE • Earth's Resources GCSE • Infection and response GCSE • Bio-energetics GCSE 		
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Homework	Homework booklet: Chemistry full curriculum so far	Homework booklet: Physics full curriculum so far	Homework booklet Biology full curriculum so far			

