The King's (The Cathedral) School
Peterborough

A Family Achieving Excellence

Chemistry CURRICULUM OVERVIEW 2023/2024

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	22	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
Year/Term	**Autumn**											**Spring**														**Summer**													
SEVEN	**Starting Science** Safety Investigation Graphs			**Cells** Plant and animal cells Using microscopes			**Changing States** Solid, Liquids and Gases Particles States of matter BP/MPs		**Energy transfers** Types of energy Transfers and transformations			**Nutrition** Balanced Diet, Food groups, Food tests			**Separating mixtures** Purification of solutions			**Energy Resources** Energy as a resource, Diverse energy resources			**Adaptations** Adaptations Evolution		**Forces** Force diagrams Types of force			**Rocks and weathering** Types of rock Rock cycle Earth structure Fossils			**Ecology** Variation, Diversity of species, Interdependence			**Space** Solar system Planetary motion		
EIGHT	**Elements, compounds, fuels** **Conservation of mass** **Formula equations** **Fuels** **Pollution**								**Light and sound** White and coloured light Reflection/ray diagrams Pitch/frequency Human ear						**Health and variation** Microbes Disease Variation Natural selection						**Respiration, photosynthesis,** movement, Circulation, Breathing, Respiration, Photosynthesis, Musculoskeletal system, Exercise & Smoking					**Electricity and magnetism** Circuit diagrams Linear and parallel Electrical safety Magnets Electromagnets					**Acids, alkalis, metals** pH scale Neutralisation Reactions of metals Rust Making salts				

Bold – topic headings
Metals acids, bases and salts
Atoms, ions, redox etc
Atmospheric chemistry
Chemical Analysis

NINE	**Separating substances and water.** Elements, mixtures, compounds Chromatography Water treatment Required practicals	**Atomic structure and periodic table intro** Atomic model Arrangement of the elements in the periodic table	**Metals and reactivity** Metals properties Extraction based on reactivity Redox in terms of oxygen	**The atmosphere** Evolution of the atmosphere Pollution sources	**Rates of reaction** Collision theory Factors effecting rate – concentration, surface area, temperature, catalysts Required practicals	
TEN	**Structure and bonding** History of atomic structure Isotopes States of matter Ions and ionic bonding Covalent bonding Metallic bonding	**Oil (organic chemistry)** Fractional distillation Simple molecules Alkanes, alkenes, polymers Chemical test Combustion and atmospheric chemistry	**Periodic table** group1 metal reactivity Displacement and redox reactions of group 7 in terms of electrons Group 0	**Electrolysis** Ions and ionic compounds Redox Half equations Required practical	**Acids ,bases and salts** Acids as proton donors, reactions with metals, bases and carbonates Salt formation required practical	**Quantitative chemistry** Calculations involving mass, Mr, moles and concentration Titration required practical
ELEVEN	**Exothermic, endo thermic** Required practical **equilibria** **LCA**	**Rates** **Chemical analysis** - (and for combined groups revision 5.1-5.4)	Triple – **further organic** Combined – revision 5.5-5.10		Revision	
TWELVE	**Atomic structure** including mass spectrometry **Periodicity** **Group 2,** **Redox**	**Group 7,** **Amount of substance** **Kinetics** **Introduction to organic** – nomenclature, isomers	**Amount of substance** **Alkanes, alkenes, alcohol**	**Energetics** **equilibria** **Alcohol, Halogenoalkanes**	**Equilibria** **KSAS** **Organic synthesis** **IR** **Revision**	**Thermodynamics** **Carboxylic acids** **aspirin prep**

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	Introduction to Chem Structure and bonding					
THIRTEEN	**Entropy** **Acids and bases** **Optical isomers,** **aldehydes and ketones** **Benzene**	**Acids and bases** **Redox and electrochemistry** **Benzene** **Kinetics** **Kp** **Amides and amines**	**Transition metals** **Polymers** **Amino acids** **chromatography**	**Mocks** **transition metals** **periodicity** **DNA** **NMR** **organic synthesis**	**Required practical catch up and revision** **Organic synthesis and revision**	

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