

Year 7 detailed long-term plan

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Chemistry: Matter The particle model States of matter Diffusion Pressure Pure substances and mixtures Separation techniques Atoms, elements and compounds Chemical formulae Polymers The periodic table	Chemistry: Matter Physical changes and chemical reactions Acids and alkalis Indicators and pH Strong and weak acids. Neutralisation. Solutions Solubility Biology: Organisms Levels of organisation The skeleton Movement Observing cells Plant and animal cells Specialised cells and unicellular organisms Osmosis and diffusion	Biology: Genes Variation in species Adapting to change Continuous and discontinuous variation Adolescence and puberty Reproduction in mammals The digestive and circulatory systems Biology: Ecosystems Food webs and chains Plant distribution and competition Plant reproduction and pollination	Biology: Genes Fossils The fossil record Physics: Forces Introduction to forces Balanced and unbalanced forces Motion Speed distance and time The force of gravity Friction Turning forces Pressure in liquids and gases	Physics: Energy Why do our bodies need energy? Energy requirements Energy in the home Renewable and non-renewable energy resources Power Energy transfers and dissipation Work done Thermal energy Physics: Waves Sound waves Light waves Shadows and reflection	Physics: Waves Coloured light How we observe coloured objects Physics: Heating and cooling Temperature Thermometers Heat dissipation Conductors and insulators Topic: Material science Ceramics Polymers and plastics Composites

Year 8 detailed long-term plan

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Space Days, months and years Gravity Seasons Speed Distance time graphs Force and motion Acceleration Relative motion.	Light Reflection and refraction Lenses The eye Weight Supporting weight Force effects on springs Levers Moments of a force. Classifying rocks Minerals The geosphere Plate boundaries Rocks forming and transforming	Chemical reactions Combustion Oxidation Displacement reactions Thermal decomposition The atmosphere and hydrosphere Polluting the atmosphere Evaporation Clouds Hydrosphere Groundwater Contamination	Endothermic and exothermic reactions Acids and alkalis Acids reacting Acid rain Weathering Erosion Crude oil	Health Disease Asthma Nutrients Energy in food Life cycles Female and male reproductive systems	Series and parallel circuits Potential difference Current Electromagnets Classification Photosynthesis Making glucose Cells transferring energy Aerobic respiration Anaerobic respiration Food webs Populations Producers Decomposers

Year 9 detailed long-term plan

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Chemistry: Matter Changing states of matter Melting and freezing Boiling and evaporation Diffusion Gas pressure Inside particles Solutions and solubility Filtration Distillation Chromatography Elements, compounds and mixtures Word and symbol equations Chemical formulae The periodic table trends and properties of group 1, 7 and 0	Chemistry: Reactions Atomic arrangement in chemical reactions Combustion Which fuel? Thermal decomposition Conservation of mass Endothermic and exothermic reactions Energy level diagrams and particle arrangement Bond energy	Biology: Genes Variation in species Continuous and discontinuous variation investigations Adaptations of plants and animals Adolescence and puberty Reproductive systems Fertilisation, implantation and development of the fetus The menstrual cycle	Biology: Organisms Levels of organisation The structure and function of the skeleton Movement Muscles, ligaments and cartilage Microscopy Plant and animal cells Specialised cells Diffusion and osmosis Unicellular organisms Biology: Disease Communicable disease Lines of defence Pathogens White blood cells Vaccines	Physics: Energy Energy requirements Energy in the home-generating electricity Renewable or non-renewable? Power of appliances Energy stores and transfers Energy dissipation and calculations Calculating work done Thermal energy transfers Energy transfers in solids and fluids Infrared radiation Insulators	Physics: Waves Longitudinal waves Wave features and calculations The Ear's adaptations Luminous objects Reflection and lenses Eclipses Energy in waves Radiation Chemistry: Bonding Structure of the atom inc electronic structure History of the atom Atoms into ions Ionic bonding Giant ionic structures Covalent bonding Structure of simple molecules Practical – identifying ionic and covalent compounds Giant covalent structures Fullerenes and graphene Bonding in metals Giant metallic structures

Year 10 detailed long-term plan

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Biology Cell structure and transport Cell division Hierarchy of organisms The digestive systems and enzyme function Organisation in plants and animals Communicable disease	Chemistry Atomic structure Atoms into ions The periodic table Structure and bonding in metals, non-metals and ionic substances Calculating mass, moles and molecular mass Calculating concentration Chemical changes	Physics Conservation and dissipation of energy Energy transfers and calculations Energy transfers by heating Generating electricity – renewable and non-renewable resources Electricity in series and parallel circuits Resistance	Biology Preventing and treating disease Non-communicable diseases Photosynthesis Aerobic respiration Anaerobic respiration The human nervous system and homeostasis	Chemistry Electrolysis Endothermic and exothermic reactions Energy changes and bond energies Rate of reaction and equilibrium	Physics Electricity in the home The national grid Particle model States of matter Density Radioactivity Forces Balanced forces

Year 11 detailed long-term plan

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1
Chemistry Crude oil and fuels Chemical analysis The Earth's atmosphere Global warming Combustion Finite resources Recycling Potable water	Physics Speed, distance and time Acceleration Momentum Wave properties and calculations Electromagnetic wave uses and dangers Magnetism and electromagnetism	Biology Hormonal control in humans Hormones and the menstrual cycle Reproduction Variation and inheritance Fossils Extinction Natural selection Selective breeding Genetic modification Cloning	Biology Adaptations Interdependence and competition in plants and animals Organisation of an ecosystem Distribution and abundance Biodiversity	Chemistry The periodic table Structure and bonding Electrolysis Rates of reactions Crude oil and fuels Biology Cell structure and transport The digestive system Enzymes Photosynthesis Respiration The human nervous system Physics Energy stores and transfers Electric circuits The particle model of matter Forces