KS3 Science Curriculum mapping of topics

Year 7 Topic	Overview of Topic	Curriculum links to key concepts	Overview of key literacy, numeracy and practical skills
Introduction to Science – Science passport	Pupils will learn basic practical skills to support the curriculum including lab safety, apparatus identification, use of Bunsen burners, measuring, reading scales and graph drawing	NA	Basic practical skills Observing Graph Plotting Interpreting Data Writing lab rules
Cells, tissues, organs and organ systems	Pupils will learn the fundamentals of living things, they will prepare cell slides and observe them using microscopes. They will study unicellular and multicellular organisms and look at the skeletal system as an example of an organ system	Cells	Preparing a slide Using microscopes Magnification calculations
Particles	Pupils will learn the arrangement of particles in solids, liquids and gases and the differences in particle behaviour in these three states of matter as well as the kinetic theory of matter	Particles Energy	Observing Concluding Graph Plotting Reading scales – thermometers Density calculation
Forces	Pupil will learn the different types of forces, the effects of forces and the foundations of making objects move	Forces Energy	Using Newton meters Friction investigation Resistive Forces investigation Drawing force diagrams Calculations for up-thrust and buoyancy
Diffusion & Separation Techniques	Pupils will learn how separate substances using a variety of techniques such as filtering, evaporation , distillation and chromatography	Particles Energy	Calculating Rf values Observing Graph plotting Reading scales Method writing Rock salt practical Bunsens
Reproduction – Human & Plant	Pupils will learn key aspects of human and plant reproduction	Reproduction Genetics	Flower dissection Graph Plotting

			Interpreting data
Acids & Alkalis	Pupils will learn to identify substances based on their pH	Particles Energy	Use of indicators Making red cabbage indicator Observing Method Writing Bunsens
Space	Pupils will learn about Earth and the Solar System	Forces Energy	Calculating gravity force Planet Research – reading for information Interpreting data Graph plotting
Ecosystems	Pupils will study the interdependence of living organisms including limited resources	Cells Evolution	Interpreting data Calculating accumulation of toxins Drawing food chains/webs
Earth & Atmosphere	Pupils will learn about the rock cycle, the atmosphere and fossil fuels and link these to pollution and climate change	Particles Evolution Genetics	Interpreting data Reading for information Observing

Yr7 Rotation

First 3 weeks BASELINE ASSESSMENT AND SCIENCE PASSPORT

Teach C1 and B1 before test

Y band start

C1 Particles S/L/G

X Band start

B1 Cells

Autumn

X1, X3, Y1 and Y4

P1 Forces

X2, Y2 and Y3

C2 Diffusion & separation

Teach P1 and C2 before test

X1, X3, Y1, Y4 Start

B3 Reproduction

X2, Y2, Y3 Start

C3 Acids & Alkalis

Spring

Teach B3 and C3 before test

P2 Space

To be completed by all after B3 & C3 and before test

X1 / Y1 / X3 / Y4 Start

B6 Ecosystems

C6 Earth & Atmosphere

X2 / Y2 / Y3 Start

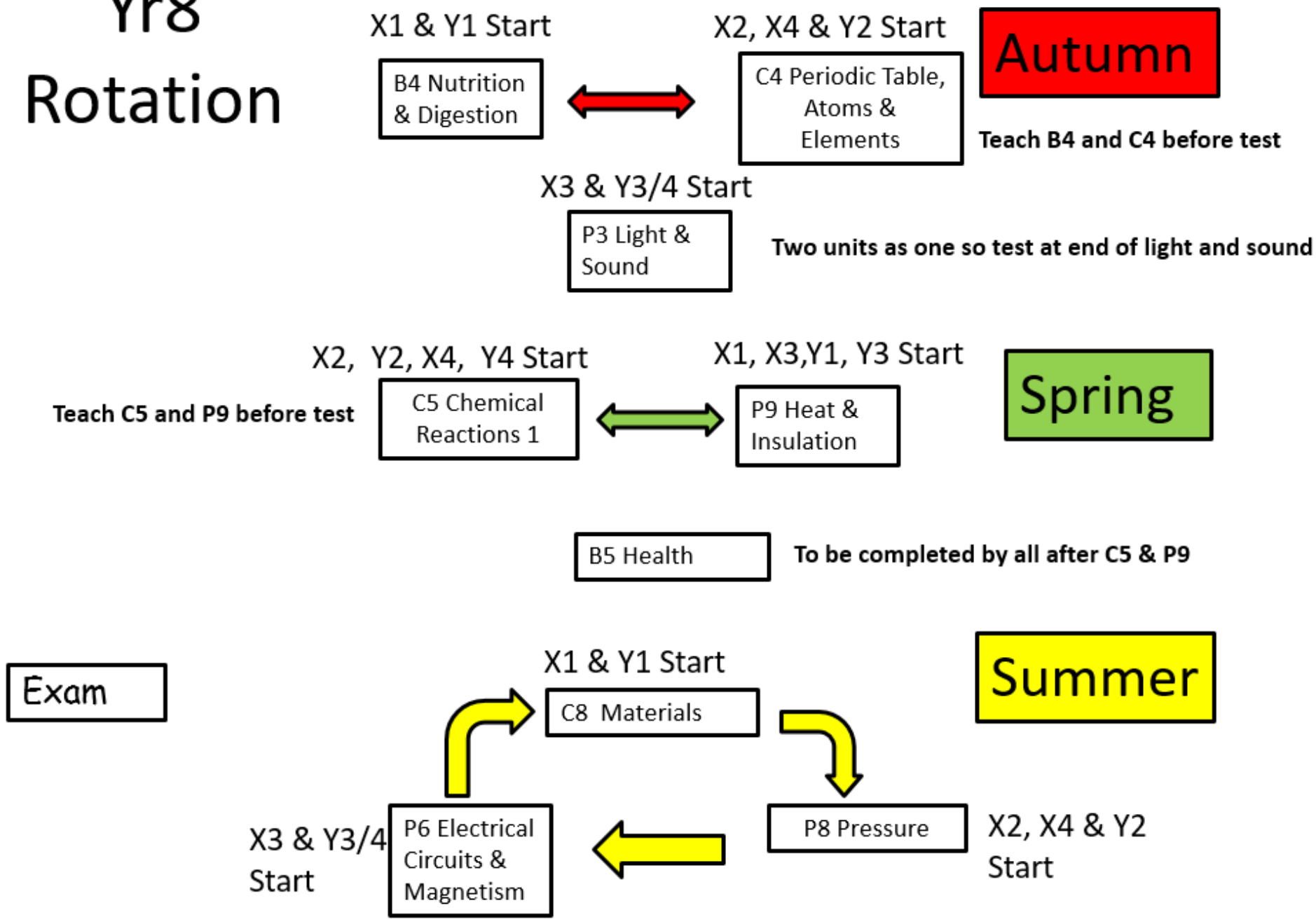
Exam

Summer

Year 8 Topic	Overview of Topic	Curriculum links to key concepts	Overview of key literacy, numeracy and practical skills
Nutrition & Digestion	Pupils will learn the structure and function of the digestive system, importance of a balanced diet and the role of enzymes	Cells Particles	Interpreting data Food tests practical Calculating energy in food
Periodic Table, Atoms & Elements	Pupils will learn about the differences between elements, mixtures and compounds and look at trends in the periodic table.	Particles Energy	Observing Interpreting Data Testing metals and non-metal elements Making Iron Sulphide
Light & Sound	Pupils will learn the properties of light and relate these to the eye and camera. Pupils will learn the properties of sound and relate these to the ear and microphone. Pupils will learn about observed waves.	Particles Energy	Observing Measuring angles Reflection and refraction practicals
Chemical Reactions 1	Pupils will learn the basics of chemical reactions including combustion, gas tests, physical v chemical changes, thermal decomposition and exothermic reactions	Particles Energy	Observing Bunsens Graph plotting Calculating means Mg coils in crucibles – measuring mass Heating Copper Carbonate – measuring mass
Heat & Insulation	Pupils will learn about energy transfers including conduction, convection, radiation and thermal imbalance	Energy Particles	Observing Bunsens Burning Food Practical Intro to specific heat capacity Conduction practical – rods of different materials Insulation investigation
Health	Pupils learn about factors that affect health and fitness, including effects of drugs and alcohol. Pupils will learn about diffusion in the cells and body. Pupils will learn what respiration is, where it occurs and why it occurs and the differences in different organisms	Cells Evolution	Reading for information Interpreting data Lung Dissection – demo Measuring Recording Data Graph Plotting Energy in food practical

Materials	Pupils will learn about the reactivity series Pupils will explore the properties of different materials.	Particles Energy	Observing Interpreting data Bunsens Reacting metals and water Reacting metals and acid Reading for information Research - Goretex
Pressure	Pupils will learn about pressure in different environments	Energy Particles Forces	Pressure calculations Interpreting data Graph plotting Research
Electrical Circuits & Magnetism	Pupils will study the fundamentals of current electricity. Pupils will learn how to measure current and voltage in different types of circuit and relate this to resistance. Pupils will learn the properties of magnets and electromagnets and their uses.	Energy Particles Forces	Observing Building series and parallel circuits Calculations Interpreting data Observing magnetic fields Plotting graphs

Yr8 Rotation



Year 9 Topic	Overview of Topic	Curriculum links to key concepts	Overview of key literacy, numeracy and practical skills
Photosynthesis	Pupils will learn about the structure of plants and the process by which plants make their own food.	Cells Evolution Particles Energy	Observing Testing a leaf for starch Reading for information Interpreting data Bunsens
Chemical Reactions 2	Pupils will learn about the different types of chemical reactions and factors affecting the rate of reaction	Particles Energy	Observing Interpreting data Acids and metals practical Measuring rate of reaction
Forces, Energy Transfer, Electricity & Static	Pupils will study the effects of forces. Pupils will study the fundamentals of static and current electricity	Energy Particles Forces	Observing Hooke's Law practical Work done equation Energy Transfer equations
Motion	Pupils will study the factors that affect the motion of objects	Forces Energy Particles	Calculating speed Newton's Laws of Motion Calculating resultant force Graph plotting – speed/distance and velocity/time
Genetics & Evolution	Pupils will learn about evolution by natural selection, selective breeding and extinction.	Cells Evolution	Continuous & Discontinuous variation graphs Reading for information Interpreting data Research
Maths Skills	Pupils will develop some of the mathematical skills that they will utilise at GCSE		Percentages, Ratios and Fractions Formulae Standard Form Significant Figures Volume and Area Interpreting graphs
Careers in Science	Pupils will explore a variety of careers that involve Science		Reading for information Measuring and recording data Research
Working Scientifically	Pupils will further develop their scientific skills to improve these as they progress to GCSEs		Identifying variables Writing a risk assessment Method writing Drawing apparatus Constructing and interpreting tables of data Identifying anomalies and errors

			Writing conclusions and evaluations
Astronomy in Space	Pupils will have the opportunity to study Astronomy and Space for the last time unless they opt for Triple Science. They will study satellites, animals in space, astronauts, the night sky, telescopes, and will research whether Mars can sustain life.		Research Reading for information Interpreting data Writing a report

Yr9 Rotation