

## KS3 Science Curriculum Map

Year 7						
Basic Skills	B1	C1	P1	B2	C2	P2
Pedagogy	Pedagogy	Pedagogy	Pedagogy	Pedagogy	Pedagogy	Pedagogy
Lab safety Scientific equipment Hazards and Bunsen Burners	Cells Movement Breathing	Particle model Separating mixtures	Contact forces Gravity, Speed, Pressure	Variation Human reproduction Plant Reproduction	Periodic table Elements Metals and non-metals	Energy transfer Heating and cooling Sound Light
Literacy	Literacy	Literacy	Literacy	Literacy	Literacy	Literacy
Naming scientific equipment Naming hazards and identifying risks  Beaker Bunsen Burner Measuring cylinder Test tube Boiling tube Thermometer Stopwatch Pipette Conical flask Tripod Funnel Gauze Hazard	6 mark question Define key terms  Key word focus: Cell Uni-cellular Multi-cellular Tissue Organ Organ system Cell membrane Nucleus Cytoplasm Cell wall Vacuole Chloroplast Diffusion Joint Bone marrow Ligament Tendon Cartilage Antagonistic muscles  Organ systems	6 mark question Describe and explain  Key word focus: Particle Model Diffusion Gas pressure Density Evaporate Condense Melt Freeze Sublime Solvent Solute Solution Dissolve Soluble/ insoluble Pure Mixture Filtration Evaporation Distillation	6 mark question Devise questions  Key word focus: Newton Resultant force Friction Aerodynamic Streamlined Air resistance Tension Compression Contact force Weight Non-contact force Mass Gravity Magnetism Field Speed Relative motion Acceleration Fluid Pressure Upthrust Atmospheric	6 mark question Extended writing – letters  Key word focus: Reproduction Gamete Ovary Testicle Oviduct Uterus Ovulation Menstruation Penis Vagina Foetus Embryo Gestation Placenta Umbilical cord Amniotic fluid Pollen Ovule Pollination Germination Fertilisation	6 mark question Justify opinions  Key word focus: Periodic table Physical Chemical Property Group Period Atom Element Molecule Compound Mixture Chemical formula Metal Non-metal Displacement Reactivity Reversible Brittle Ductile Sonorous Malleable	6 mark question Critique claims  Key word focus: Energy store Thermal Chemical Kinetic Gravitational potential Elastic Dissipated Vibration Volume Pitch Amplitude Wavelength Frequency Vacuum Oscilloscope Echo Incident ray Reflected ray Normal line Angle of reflection Angle of incidence

	<p>Immune Reproductive Digestive Circulatory Respiratory Muscular skeletal Nervous</p> <p>Breathing Trachea Bronchi Bronchioles Alveoli Ribs Diaphragm Lung volume Gas exchange</p> <p>WS - prediction</p>	<p>Chromatography</p> <p>WS - conclude</p>	<p>pressure</p> <p>WS – predict, record, display</p> <p>Average</p>	<p>Seed Fruit Carpel Stamen Stigma Variation Continuous Discontinuous Characteristic</p> <p>WS - record</p>	<p>WS - observe</p>	<p>Refraction Absorption Scattering Translucent Transparent Opaque Retina</p> <p>WS Vocab - measure</p>
Maths/skill	Maths/skill	Maths/skill	Maths/skill	Maths/skill	Maths/skill	Maths/skill
<p>Identify and draw scientific equipment</p> <p>Use and light a Bunsen burner safely</p>	<p>Use a light microscope to observe and draw cells</p> <p>Prepare slides with cells</p> <p><b>Required Practical Working scientifically skill focus: 2.5 Maths skill 2h</b></p>	<p>Use techniques to separate mixtures</p> <p>Interpret changes of state graphs</p> <p>Draw particle diagrams</p> <p><b>Required Practical Working scientifically skill focus: 2.2 and 3.5 Maths skill 2c</b></p>	<p>Use formula <math>speed = \frac{distance}{time}</math> calculate speed Interpret distance-time graphs Use formula <math>weight = mass \times gravitational\ field\ strength</math> Show the forces acting on an object Draw line graphs Use formula <math>pressure = \frac{force}{area}</math> Calculate average <b>Required Practical Working scientifically skill focus: 2.2, 2.5, 3.2, 3.3, 3.5</b></p>	<p>Plot bar charts and graphs to show continuous and discontinuous data</p> <p>Practical skill-dissection</p> <p><b>Required Practical Working scientifically skill focus: 3.3</b></p>	<p>Use particle diagrams to classify substances</p> <p>Identify an unknown element from its physical and chemical properties</p> <p>Use experimental results to suggest an order of reactivity of various metals</p> <p><b>Required Practical Working scientifically skill focus: 1.3, 2.2 and 2.5</b></p>	<p>Construct ray diagrams to show how light reflect and refracts Measure angles using a protractor Draw wave diagrams to show changes in amplitude and frequency</p> <p><b>Required Practical Working scientifically skill focus: 2.1 and 2.5 Maths skill 5a</b></p>



Accurate drawing of equipment	Calculating magnification Collecting data Interpreting data Interrogate sources  P.E – how body moves	Graph skills Discuss limitations Construct explanations Analyse patters Tech food - Links to cooking	Collect data Draw conclusions	Presenting data – drawing graphs and histograms Plan variables Examine consequences	Justify opinions Estimate risks Review theories/evidence	Test hypotheses Critique claims Collect data  Tech food – energy transfer Music- sound
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Year 8

Year 8					
B3	C3	P3	B4	C4	P4
Pedagogy	Pedagogy	Pedagogy	Pedagogy	Pedagogy	Pedagogy
Digestion Respiration Photosynthesis	Chemical energy Types of Reaction Acids and alkalis	Magnetism Current, Voltage Resistance Electromagnets	Interdependence Inheritance Evolution	Earth structure Earth resources Climate	Wave effect Wave properties Work Energy resources Energy costs Universe
Literacy	Literacy	Literacy	Literacy	Literacy	Literacy
6 mark question Extended writing  Key word focus: Digestion Enzyme Fibre Carbohydrate Lipid Protein Stomach Oesophagus Small intestine Large intestine Bacteria Respiration Aerobic Anaerobic Fermentation Photosynthesis Chlorophyll Chloroplast Stomata Iodine Glucose Oxygen Carbon dioxide	6 mark question  Key word focus: Acid Alkali pH Indicator Concentration Neutralisation Hazard Weak Strong Solution Catalyst Exothermic Endothermic Chemical bond Fuel Reactant Product Conserved Chemical reaction Physical change Combustion Thermal decomposition	6 mark question  Key word focus: Current Voltmeter Ammeter Negatively charged Positively charged Electron Electrostatic force Series Parallel Potential difference Resistance Conductor Insulator Electromagnet Solenoid Core Magnetic force Permanent magnet Magnetic poles  WS – predict, plan, interpret	6 mark question Justify opinions Evaluate evidence  Key word focus: Food chain/ food web Habitat Adaptation Variation Ecosystem Environment Population Community Producer Consumer Bioaccumulation Evolution Natural selection Extinct/ extinction Biodiversity Competition Distribution Species Inheritance DNA Gamete Inherited characteristic Chromosome	6 mark question Construct explanations  Key word focus: Earth Rock cycle Weathering Erosion Minerals Sedimentary Metamorphic Igneous Strata Climate Global warming Fossil fuel Greenhouse effect Temperature Carbon cycle Ore Extraction Recycling Mineral  WS – hypothesis, repeat	6 mark question Discuss limitations  Key word focus: Power Energy resources Non-renewable/ finite Renewable Fossil fuels Ultrasound Ultraviolet Microphone Transverse wave Longitudinal wave Transmission Universe Galaxy Light year Star Orbit Exoplanet Gravity Solar system

WS – observe, record			Gene Mutation WS – collate, independent, dependent, variable, hypothesis		
Maths/ skill	Maths/ skill	Maths/ skill	Maths/ skill	Maths/ skill	Maths/ skill
Interpret food labels Calculate energy requirements Calculate BMI Use word equations to describe a process <b>Required Practical Working scientifically skill focus: 2.4, 2.5, 3.2</b>	Follow rules to name compounds Use data and observations to determine the pH of a solution Use experimental data to calculate temperature change and determine the type of reaction taking place Calculate masses of reactants and or products when given other masses involved <b>Required Practical Working scientifically skill focus: 2.3, 2.4</b>	Use the formula resistance = potential difference/ current Build series and parallel circuits <b>Required Practical Working scientifically skill focus: 2.2, 2.3, 2.4, 3.2 and 3.3 Maths skill 2c, 4a, 4c</b>	Interpret predator/ prey population graphs <b>Required Practical Working scientifically skill focus: 2.2 and 2.6 Maths skill 2c and 2b</b>	Evaluate claims that human activity is causing global warming or climate change Construct arguments for recycling and the use of materials <b>Required Practical Working scientifically skill focus: 2.2, 2.5 and 3.2 Maths skill 2a and 3d</b>	Calculate the cost of home energy usage <b>Required Practical Working scientifically skill focus:</b> <b>Maths skill</b>
Assessment / Retention	Assessment / Retention	Assessment / Retention	Assessment / Retention	Assessment / Retention	Assessment / Retention
Recall starters Extended writing – assessed task Checkpoint End of unit assessment Photosynthesis assessed task	Recall starters Conservation of mass assessed task – data analysis skills Checkpoint End of unit assessment	Recall starters Required practical – plotting resistance on a graph Electromagnets QWC Checkpoint End of unit assessment	Recall starters Interpreting data from a graph Checkpoint End of unit assessment	Recall starters Extracting metals QWC Rock cycle – extended writing task Fossil fuels QWC Checkpoint End of unit assessment	Recall starters Energy costs – assessed task Checkpoint End of unit assessment

B3/C3/P3 combined assessment for the year group Some year 7 recall included where relevant and appropriate			B3/C3/P3/B4/C4/P4 combined END OF YEAR assessment for the year group Some year 7 recall included where relevant and appropriate		
<b>Cultural Capital</b>	<b>Cultural Capital</b>	<b>Cultural Capital</b>	<b>Cultural Capital</b>	<b>Cultural Capital</b>	<b>Cultural Capital</b>
Careers lesson	Careers lesson	Careers lesson	Careers lesson	Careers lesson	Careers lesson
<p>Big Bang STEM event – March  Science week  Year 8 and 9 – Chester Zoo start of summer term  STEM ambassador / enter STEM competitions  Extra-curricular science club  External speakers</p>					
<b>Link to prior learning</b>	<b>Link to prior learning</b>	<b>Link to prior learning</b>	<b>Link to prior learning</b>	<b>Link to prior learning</b>	<b>Link to prior learning</b>
KS2 Plants Animals including humans Year 7 B1 –review cells	KS2 states of matter Properties and changes of materials Uses of everyday materials Year 7 C2 – review periodic table	KS2 Electricity Forces and magnets Year 7 P1 and P2 – review forces and energy	KS2 Living things and their habitat Evolution and inheritance Year 7 B2- review variation, reproduction	KS2 Rocks Earth and space	KS2 Earth and spaces Sound and light Year 7 P2 – review energy, sound and light
<b>Cross Curricular</b>	<b>Cross Curricular</b>	<b>Cross Curricular</b>	<b>Cross Curricular</b>	<b>Cross Curricular</b>	<b>Cross Curricular</b>
Tech food – diet and digestion Collect data Draw conclusions Communicate ideas	Collect data Plan variables	Test hypotheses and Analyse patterns Present data	Presenting data Review theories Interrogate sources Justify opinions	Links to geography – rock cycle, climate Review theories Construct explanations	PSHCE – energy cost Examine consequences Discuss limitations