

Year 7 Autumn Term

	1. Passport	2. Cells, tissues, organs and systems	3. The particle model	4. Forces
Content	<ol style="list-style-type: none"> 1. Lab safety 2. Using a Bunsen burner 3. Lab equipment 4. Carrying out an investigation safely 5. Planning an investigation 	<ol style="list-style-type: none"> 1. Life processes 2. Organs 3. Tissues 4. Microscope – plant cells 5. Microscope – animal cells 6. Organelles 7. Organ systems 	<ol style="list-style-type: none"> 1. Solids, liquids and gases (properties) 2. Particles 3. Making a hypothesis 4. Brownian motion 5. Diffusion 6. Air pressure 	<ol style="list-style-type: none"> 1. Different forces 2. Springs 3. Friction 4. Pressure 5. Balanced and unbalanced forces
Skills (Lit, Num, Working scientifically)	<ul style="list-style-type: none"> • Reading scales • Identifying hazards and minimising risks • Identifying independent and dependent variables • Presenting data in tables and graphs 	<ul style="list-style-type: none"> • Using a microscope • Biological drawing • Conventions in writing (organised headings/lists) • Magnification and scales 	<ul style="list-style-type: none"> • Making a hypothesis • Converting units • Calculating volumes 	<ul style="list-style-type: none"> • Conventions for communication • Taking notes • SI system
Stretch and challenge	Why is science important?	Rearranging IAM equation, unit conversions	Extended projects from ACE Worksheets identified in scheme	DT – designing sports equipment PE – sports
Assessment	<ul style="list-style-type: none"> • STA- Practical baseline investigation assessment • Baseline written assessment 	<ul style="list-style-type: none"> • STA – Is it alive?/trial of the Dalek • STA unit assessment 	<ul style="list-style-type: none"> • STA unit assessment 	<ul style="list-style-type: none"> • STA unit assessment
Cross-curricular	Safety in technology lessons	Art- Observational drawing of cells History- History of cell theory Maths- Magnification equation, use of scales English- Conventions and ordering in scientific writing	Maths - Converting units, calculating volumes Geography - use of land, environmental pollution, air pressure and weather forecasting History - changing nature of rubbish , funding for science research pre 19th century English - adjectives, comparatives and superlatives	Needs doing
Enrichment /Careers	General idea of the areas related to a science degree	Transplants- links to careers in medicine linked to organ donations, functions of organs, examining cells/tissues under the microscope	Needs doing	Engineering

Year 7 Spring Term

	5. Ecosystems	6. Energy	7. Mixtures and separation
Content	<ol style="list-style-type: none"> 1. Variation 2. Measuring variation 3. Relationships in data 4. Adaptations 5. Causes of variation 6. Food chains and webs 7. Transfers in food chains 	<ol style="list-style-type: none"> 1. Energy in food 2. Energy stores and transfers 3. 	<ol style="list-style-type: none"> 1. Mixtures 2. Solutions 3. Evaporation 4. Chromatography 5. Distillation
Skills (Lit, Num, Working scientifically)	<ul style="list-style-type: none"> • Bar graphs, histograms, scatter graphs, Normal distribution • Paragraph structures, topic sentences 	Needs doing	<ul style="list-style-type: none"> • Flow charts • conventions and symbols • presenting and interpreting data (tables and graphs)
Stretch and challenge	Coelocanths, adaptations, leaf litter	Needs doing	Needs doing
Key Assessment	<ul style="list-style-type: none"> • STA unit assessment 	<ul style="list-style-type: none"> • STA unit assessment 	<ul style="list-style-type: none"> • STA unit assessment
Cross-curricular	Geog - habitats	Needs doing	DT – design of solar still
Enrichment /Careers	Zookeeper, conservationist, ecology	Needs doing	Chemical analysis of substances in a variety of sectors (water management, crime investigation, FSA)

Year 7 Summer Term

	8. Animal reproduction	9. Current electricity	10. Atoms, elements and compounds
Content	<ol style="list-style-type: none"> 1. Scientific method and ideas 2. Gametes and fertilisation 3. The reproductive system 4. Becoming pregnant 5. Gestation and birth 6. ACE assessed task 7. Puberty 8. The menstrual cycle 	<ol style="list-style-type: none"> 1. Circuit symbols and basic concepts 2. Investigating circuits 3. Models of electric current 4. Series and parallel circuits 5. Current in a wire investigation 6. Changing the current (voltage) 7. Using electricity (safety) 	<ol style="list-style-type: none"> 1. Sorting and presenting data 2. Atoms and molecules 3. Elements 4. Making a compound 5. Chemical reactions - two elements 6. Using Molymods 7. Signs of chemical reactions 8. Thermal decomposition 9. Explaining diffs between A, E, C, M,
Skills (Lit, Num, Working scientifically)	<ul style="list-style-type: none"> • Size of cells and embryo • Gestation periods – recognising relationships • Extended writing opportunities 	<ul style="list-style-type: none"> • Using table to display data • Relationships from graphs 	<ul style="list-style-type: none"> • Tables, graphs, pie charts • Observations from practical • Using apparatus (delivery tube)
Stretch and challenge	Reproductive systems of other animals Twins project Foetal development Diffusion across the placenta ACE assessment Hormones in the menstrual cycle Endangered species	Ring mains More difficult current in parallel circuits	My favourite element
Key Assessment	<ul style="list-style-type: none"> • STA the ACE task • STA menstrual cycle description • STA unit assessment 	<ul style="list-style-type: none"> • STA unit assessment 	<ul style="list-style-type: none"> • STA unit assessment
Cross-curricular	HRSE – STIs, contraception, legal age for consent, how lifestyle choices affect mother and child during pregnancy (KS4) Music – Castrati singers RE – religious reasons for circumcision, Catholic teaching on sex Geography – the role of zoos in conservation of endangered species Maths –, drawing graphs, finding relationships	Maths - Tables and graphs skills Tech – circuits	Geography – composition of the atmosphere, Earth, mining, limestone History – changes in the atmosphere natural and man-made, uses of metal in Iron and Bronze Ages Maths – data handling English – the use of language to inform and persuade using facts and opinions
Enrichment /Careers	Zookeeper, conservationist, sonographer, midwife, breast feeding support worker, health visitor, obstetrician	Electrician, stage lighting manager	

Year 8 Autumn Term

	11. Acids and bases	12. Muscles and bones	13. Sound	14. Food and nutrition
Content	<ol style="list-style-type: none"> 1. Hazards 2. Indicators 3. Evaluating indicators 4. Acidity and alkalinity 5. Neutralisation 6. Making a salt 7. Acids and bases 8. Indigestion remedies 	<ol style="list-style-type: none"> 1. Muscles and breathing 2. Muscles and blood 3. The skeleton 4. Muscles and moving 5. Drugs 6. Scientific questions 	<ol style="list-style-type: none"> 1. Making sounds 2. Sound travelling 3. Detecting sounds 4. Using sound (transfer of energy, echoes) 5. Comparing waves 	<ol style="list-style-type: none"> 1. Nutrients and food tests 2. Uses of nutrients 3. Balanced diets 4. Digestion 5. Surface area 6. Absorption
Skills (Lit, Num, Working scientifically)		<ul style="list-style-type: none"> • Calculate breathing and heart rate • Plan an investigation for a scientific question • Writing up an investigation 	<ul style="list-style-type: none"> • Making notes and summarising 	<ul style="list-style-type: none"> • Calculating SA:V • Qualitative analysis (food tests) • Facts/opinion/bias • Models (Visking tubing)
Stretch and challenge		<p>Vital capacities</p> <p>Application of antagonistic muscles to new examples</p>		
Key Assessment	<ul style="list-style-type: none"> • STA unit assessment 	<ul style="list-style-type: none"> • STA antagonistic muscles • STA investigation write-up • STA unit assessment 	<ul style="list-style-type: none"> • STA unit assessment 	<ul style="list-style-type: none"> • STA unit assessment
Cross-curricular		<p>PE – muscles, breathing rates, exercise, sports injuries, drugs in sport</p> <p>Tech – tubular structures for strength</p> <p>Art – anatomy in art</p> <p>PSHE - drugs</p>		<p>Food tech – balanced diets</p> <p>Maths SA:V</p>
Enrichment /Careers				<p>Dietician</p>

Year 8 Spring Term

	15. Combustion	16. Fluids	17. Energy transfers	18. Plant reproduction
Content	<ol style="list-style-type: none"> 1. Burning fuels 2. Oxidation 3. Fire safety 4. Air pollution 5. Global warming 6. Reducing pollution 	<ol style="list-style-type: none"> 1. Using the particle model to explain properties 2. Changing state 3. Pressure in fluids 4. Floating and sinking 5. Drag 6. 	<ol style="list-style-type: none"> 1. Temperature and energy 2. Energy transfers 3. Controlling energy transfers 4. Power and efficiency 5. Paying for energy 	<ol style="list-style-type: none"> 1. Accuracy and estimates (sampling/quadrats) 2. Types of reproduction 3. Pollination 4. Fertilisation and dispersal 5. Germination and growth
Skills (Lit, Num, Working scientifically)	<ul style="list-style-type: none"> • Planning a fair test (control variables) 	<ul style="list-style-type: none"> • Calculating density 	<ul style="list-style-type: none"> • Accuracy and precision 	
Stretch and challenge				
Key Assessment	<ul style="list-style-type: none"> • STA unit assessment 	<ul style="list-style-type: none"> • STA unit assessment 	<ul style="list-style-type: none"> • STA unit assessment 	<ul style="list-style-type: none"> • STA unit assessment
Cross-curricular				
Enrichment /Careers				

Year 8 Summer Term

	19. Light	20. The Periodic table	21. Earth and space	22. Breathing and respiration
Content	<ol style="list-style-type: none"> 1. Light on the move 2. Reflection 3. Refraction 4. Camera and eyes 5. Colour 	<ol style="list-style-type: none"> 1. Dalton's atomic model 2. Chemical properties 3. Medeleev's table 4. Physical trends 5. Chemical trends 	<ol style="list-style-type: none"> 1. Evidence for our model of the solar system 2. Seasons 3. Earth's magnetic field 4. Gravity in space 5. Beyond the solar system 	<ol style="list-style-type: none"> 1. Aerobic respiration 2. Gas exchange system 3. Getting oxygen 4. Comparing gas exchange in organisms 5. Anaerobic respiration
Skills (Lit, Num, Working scientifically)	<ul style="list-style-type: none"> • Ray diagrams • Preparing a presentation 		<ul style="list-style-type: none"> • Numerical comparisons 	<ul style="list-style-type: none"> • Means, ranges, outliers and anomalous results • Cause and effect
Stretch and challenge				
Key Assessment	<ul style="list-style-type: none"> • STA unit assessment 	<ul style="list-style-type: none"> • STA unit assessment 	<ul style="list-style-type: none"> • STA unit assessment 	<ul style="list-style-type: none"> • STA unit assessment
Cross-curricular				
Enrichment /Careers				

Year 9 Autumn Term

	23. Unicellular organisms	24. Metals and their uses	25. Rocks	26. Forces and motion
Content	<ol style="list-style-type: none"> 1. Unicellular or multicellular 2. Microscopic fungi 3. Bacteria 4. Potocists 5. Decomposers and carbon 	<ol style="list-style-type: none"> 1. Metal properties 2. Corrosion 3. Metals and water 4. Metals and acids 5. Pure metals and alloys 	<ol style="list-style-type: none"> 1. Rocks and their uses 2. Igneous and metamorphic rocks 3. Weathering and erosion 4. Sedimentary rocks 5. Materials in the Earth 6. 	<ol style="list-style-type: none"> 1. Forces and movement 2. Energy resources and movement 3. Speed 4. Turning forces 5. Machines and work
Skills (Lit, Num, Working scientifically)		<ul style="list-style-type: none"> • Accuracy and reliability 		
Stretch and challenge				
Key Assessment	<ul style="list-style-type: none"> • STA unit assessment 	<ul style="list-style-type: none"> • STA unit assessment 	<ul style="list-style-type: none"> • STA unit assessment 	<ul style="list-style-type: none"> • STA unit assessment
Cross-curricular				
Enrichment /Careers				

Year 9 Spring Term

	27. Force fields & electromagnets	28. Genetics and evolution	29. Making materials	30. Reactivity
Content	<ol style="list-style-type: none"> 1. Magnetic and gravitational fields 2. Static electricity 3. Revisit current electricity 4. Calculate resistance 5. Electromagnets 	<ol style="list-style-type: none"> 1. Environmental variation 2. Inherited variation 3. DNA 4. Genes and extinction 5. Natural selection 	<ol style="list-style-type: none"> 1. Ceramics 2. Polymers 3. Composite materials 4. Problems with materials 5. Recycling materials 	<ol style="list-style-type: none"> 1. Explosions 2. Reactivity and rusting (revisit) 3. Energy in reactions (endo/exo) 4. Displacement 5. Extracting metals
Skills (Lit, Num, Working scientifically)				<ul style="list-style-type: none"> • % change
Stretch and challenge				
Key Assessment	<ul style="list-style-type: none"> • STA unit assessment 	<ul style="list-style-type: none"> • STA unit assessment 	<ul style="list-style-type: none"> • STA unit assessment 	<ul style="list-style-type: none"> • STA unit assessment
Cross-curricular				
Enrichment /Careers				

Year 9 Summer Term

	31. Plant growth	B1 Key concepts in Biology	C1-4	P1-2
Content	<ol style="list-style-type: none"> 1. Photosynthesis and respiration 2. Plant adaptations 3. Products of photosynthesis 4. Growing crops 5. Problems of farming 	<ol style="list-style-type: none"> 1. Microscopes and biological drawing 2. Size and units 3. Plant and animal cells (CP1) 4. Specialised cells 5. Bacterial cells 6. Enzymes 7. Enzyme action 8. Factors affecting enzymes (CP2) 9. Food tests (CP3) (TS only) 10. Transporting substances 11. Osmosis in potatoes (CP4) 	<ol style="list-style-type: none"> 1. States of matter 2. Mixtures 3. Filtration and crystallisation 4. Paper chromatography 5. Distillation 6. Investigating inks (CP) 7. Drinking water 8. Structure of an atom 9. Atomic and mass number 10. Isotopes 11. The Periodic table 12. Atomic number and the PT 13. Electronic configuration and PT 	<ol style="list-style-type: none"> 1. Vectors and scalars 2. Distance/time graphs 3. Acceleration 4. Velocity/time graphs 5. Resultant forces 6. Newton's first law 7. Mass and weight 8. Newton's second law 9. Investigating acceleration (CP) 10. Newton's third law 11. Momentum 12. Stopping distances 13. Crash hazards
Skills (Lit, Num, Working scientifically)				
Stretch and challenge				
Key Assessment	•	• STA unit assessment	• STA unit assessment	• STA unit assessment
Cross-curricular				
Enrichment /Careers				