










Curriculum Content Map

Subject: Science

Year group: 7

	TERM 1		TERM 2		TERM 3	
Unit title & description	Working Scientifically Mixtures & Separation Acids & Alkalis	Energy Current electricity	Cells, tissues, organs and systems Sexual reproduction in animals	The particle model Atoms, elements and compounds	Sound Light	Practical project
Sequencing – Why is this taught and now?	<ul style="list-style-type: none"> General introduction to working in the lab safely and why we do experiments. Opportunity to use a variety of lab equipment. Builds on KS2 (Y5) understanding of mixtures and solutions. 	<ul style="list-style-type: none"> Introduction to energy as a prerequisite to studying electrical circuits. Energy in food links back to chemistry from previous term Builds on electricity circuits in KS2 (Y6). 	<ul style="list-style-type: none"> Builds their understanding of living things from KS2. Introduction to the concept that everything is made up of cells. Sexual reproduction is preparation for studying hormones in the menstrual cycle at GCSE. 	<ul style="list-style-type: none"> Builds on their understanding of materials from KS2 (Y5). Introduction to the particles that make up cells (atoms). Classification of materials as atoms, elements and compounds. 	<ul style="list-style-type: none"> Builds on their knowledge of sound (Y4) as well as light, shadows and the eye from KS2 (Y6). Introduces the key concepts of different types of waves and their properties from GCSE. 	<ul style="list-style-type: none"> Builds on their practical skills and extends their capabilities to be able to plan, execute and evaluate an experiment over a sequence of lessons. Preparation for further practicals in year 8, 9 and GCSE.
Knowledge 	<ul style="list-style-type: none"> Equipment Method Risk Pure substances and mixtures Solutions Separation techniques: Evaporation, chromatography and distillation pH scale indicators Neutralisation Uses of neutralisation in daily life. 	<ul style="list-style-type: none"> Energy in food Energy transfers and stores Fuels Renewable and non-renewable energy resources Circuit symbols Building circuits Circuit models Series and parallel circuits Using electricity Current and voltage 	<ul style="list-style-type: none"> Life processes Cells, tissues and organs Organ systems Transplants Animal sexual reproduction Reproductive organs Fertilisation Gestation and Birth Growing up Studying reproduction to help endangered species 	<ul style="list-style-type: none"> Properties of solid, liquid and gas Particle model Brownian motion – evidence for the particle model Diffusion Air pressure Waste Particles in air Elements Metals and non-metals Compounds Chemical reactions – thermal decomposition. 	<ul style="list-style-type: none"> Making sounds How does sound travel Detecting sounds –the ear Using sound Comparing waves – sound waves and water waves Waves Light on the move – how light travels and ray diagrams Reflection Refraction Cameras and eyes Colour 	<ul style="list-style-type: none"> Area of solar panel is proportionate to the energy produced. Planning an experiment using external resources Writing a method Carrying out an experiment Recording data Drawing a graph Analysing and interpreting results
Skills 	<ul style="list-style-type: none"> Using a Bunsen burner safely Reducing risk Applying knowledge to real-world contexts Pure substances and mixtures Solutions Separation techniques: Evaporation, chromatography and distillation 	<ul style="list-style-type: none"> Practical skills, planning an investigation, using models Interpreting circuit diagrams/IV graphs Applying knowledge to real-world contexts Comparing results Using and testing scientific models 	<ul style="list-style-type: none"> Practical skills, planning an investigation Applying knowledge to real-world contexts Evaluating methods Designing scientific questions How to use a microscope. 	<ul style="list-style-type: none"> Practical skills, planning an investigation, using models Applying knowledge to real-world contexts Evaluating the use of materials Designing hypothesis and theories Recording and presenting scientific data. 	<ul style="list-style-type: none"> Practical skills, planning an investigation, using models Interpreting ray diagrams Applying knowledge to real-world contexts Evaluating methods Drawing line graphs and scatter graphs. Drawing conclusions from graphs. 	<ul style="list-style-type: none"> Practical skills, planning an investigation Applying knowledge to real-world contexts Evaluating methods Data processing
Retrieval practice Prior knowledge and skills that are revisited.	<ul style="list-style-type: none"> Knowledge tests Quick quizzes DO Now recall tasks 3-part homework 	<ul style="list-style-type: none"> Knowledge tests Quick quizzes DO Now recall tasks 3 part homework 	<ul style="list-style-type: none"> Knowledge tests Quick quizzes DO Now recall tasks 3 part homework 	<ul style="list-style-type: none"> Knowledge tests Quick quizzes DO Now recall tasks 3 part homework 	<ul style="list-style-type: none"> Knowledge tests Quick quizzes DO Now recall tasks 3 part homework 	<ul style="list-style-type: none"> Knowledge tests Quick quizzes DO Now recall tasks 3 part homework
Literacy including extended writing 	<ul style="list-style-type: none"> Writing a good method for an experiment. Summarising information in captions and titles Key vocabulary 	<ul style="list-style-type: none"> Summarising information Using tables and communicating science Key vocabulary Extended answer questions comparing different energy sources. 	<ul style="list-style-type: none"> Making notes Building complex sentences Key vocabulary Extended answer questions relating to how to use a microscope. 	<ul style="list-style-type: none"> Using scientific language effectively Fact vs opinion Key vocabulary Extended answer questions relating to states of matter 	<ul style="list-style-type: none"> Remembering: making notes and summarising; linking things together Planning a presentation (uses of sound and light) Key vocabulary 	<ul style="list-style-type: none"> Writing a method Evaluating experimental data.

	<ul style="list-style-type: none"> Extended answer questions relating to separation techniques and purifying water 		<ul style="list-style-type: none"> Extended answer questions relating to endangered species. Comprehension task- the work of zoos. 		<ul style="list-style-type: none"> Extended answer questions relating to comparing light and sounds waves. 	
Numeracy 	<ul style="list-style-type: none"> Concentration Units Measuring mass Calculating Rf values Reading the pH scale. 	<ul style="list-style-type: none"> Formulae, units Reading nutritional data Measuring mass and temperature rise Calculating temperature rise per gram Interpreting graphs Measuring current and voltage 	<ul style="list-style-type: none"> Relative scale of cells Calculating magnification 	<ul style="list-style-type: none"> Measuring mass Relative scale and sizes of various particles Converting between units Interpreting charts and tables Compacting melting points 	<ul style="list-style-type: none"> Calculating frequency and use of formula Comparing speed of sound in different materials Comparing frequency of hearing ranges. Comparing speed of light and sound Measuring angles of incidence and reflection/refraction Calculating distance using echoes 	<ul style="list-style-type: none"> Recording data Plotting a graph Analysing data
Enrichment learning 	<ul style="list-style-type: none"> Practical opportunities, which includes working in groups Possibility of investigation or project work Supplying drinking water – can we make water safe for everyone How water tastes different depending on the rocks over which it has flown Neutralisation in daily life Danger of chemicals in the home 	<ul style="list-style-type: none"> Practical opportunities, which includes working in groups Possibility of investigation or project work Considering energy changes in an amusement park How can we use less fossil fuels? How electricity was discovered Consider a world without electricity 	<ul style="list-style-type: none"> Practical opportunities, which includes working in groups Possibility of investigation or project work Doctors past and present Organ transplants The work of Zoos 	<ul style="list-style-type: none"> Practical opportunities, which includes working in groups Possibility of investigation or project work Recycling and Waste: the impact on the environment Chemical reactions in our everyday objects The Earth as a source of resources 	<ul style="list-style-type: none"> Practical opportunities, which includes working in groups Possibility of investigation or project work Animal Sounds: different ways in which they communicate and use sound How human noises affect animals 	<ul style="list-style-type: none"> Practical opportunities, which includes working in groups Possibility of investigation or project work
British values 	<ul style="list-style-type: none"> Respect for others during group work Understanding health and safety laws Respect for the environment 	<ul style="list-style-type: none"> Respect for others during group work Laws around electrical safety and plugs Respect for the environment and understanding of climate change 	<ul style="list-style-type: none"> Respect for others during group work Ethics surrounding IVF and drug testing. 	<ul style="list-style-type: none"> Respect for others during group work Understanding health and safety laws Respect for the environment 	<ul style="list-style-type: none"> Respect for others during group work Understanding disabilities – understanding the needs of deaf and blind people 	<ul style="list-style-type: none"> Respect for others during group work
Personal Development 	<ul style="list-style-type: none"> Redrafting extended answers allows development of resilience Working in groups develops confidence Homework and projects develops independence 	<ul style="list-style-type: none"> Redrafting extended answers allows development of resilience Working in groups and debating develops confidence Homework and projects develops independence 	<ul style="list-style-type: none"> Redrafting extended answers allows development of resilience Working in groups and debating develops confidence Homework and projects develops independence 	<ul style="list-style-type: none"> Redrafting extended answers allows development of resilience Working in groups and debating develops confidence Homework and projects develops independence 	<ul style="list-style-type: none"> Redrafting extended answers allows development of resilience Working in groups and debating develops confidence Homework and projects develops independence 	<ul style="list-style-type: none"> Redrafting extended answers allows development of resilience Working in groups and debating develops confidence Homework and projects develops independence
Careers 	<ul style="list-style-type: none"> Chemist, lab researcher, teacher, chemical engineering. 	Physicist, researcher, teacher, engineering, electrical engineer, electrician, any trade work	Biologist, teacher, researcher, medicine physiotherapy, nutrition	Chemist, physicist, engineer, nuclear engineer	Engineer, optometrist, medicine, telecoms technician, Audiologist, Animator, Lighting Technician, Architectural Technologist, Telecommunications Engineer	Researcher and any practical based profession e.g. trade work, engineer
Assessment opportunities 	<ul style="list-style-type: none"> Core practicals, Keyword spelling and definition tests, AP assessments, extended writing exam questions, homeworks 	Core practicals, Keyword spelling and definition tests, AP assessments, extended writing exam questions, homeworks	Core practicals, Keyword spelling and definition tests, AP assessments, extended writing exam questions, homeworks	Core practicals, Keyword spelling and definition tests, AP assessments, extended writing exam questions, homeworks	Core practicals, Keyword spelling and definition tests, AP assessments, extended writing exam questions, homeworks	Core practicals, Keyword spelling and definition tests, AP assessments, extended writing exam questions, homeworks

