



Science Curriculum Long Term Planning

Year 7		HT1	HT2	HT3	HT4	HT5	HT6
Science	Big Idea	Physics What are current, voltage and resistance? How do objects move?	Physics What is gravity? What is energy and how do we use it?	Physics and Chemistry How do we see and hear? What does the periodic table tell us?	Chemistry How are metals and non metals different and how do metals react? What are acids and alkalis? How is the Earth structured? Where are we positioned in the universe? How are rocks cycled on Earth?	Biology What are living things made of?	Biology How do humans reproduce? Why do we look like our parents?
	Assessment	Disciplinary knowledge Test 1 Educake homework every week Feedback point written tasks – extended response answers	Winter Assessment Educake homework every week Feedback point written tasks – extended response answers	Disciplinary knowledge Test 2 Educake homework every week Feedback point written tasks – extended response answers	Educake homework every week Feedback point written tasks – extended response answers	Disciplinary knowledge Test 3 Educake homework every week Feedback point written tasks – extended response answers	End of Year Assessment Educake homework every week Feedback point written tasks – extended response answers
	Wider Curriculum Links	Over 1 third of the people in the world do not have access to electricity from a national grid – why? Working safely with equipment and each other. Taking roles in turn and being a good team member How does a dimmer switch work? Link to resistance	Graphing data from helicopter practical Space exploration – How can space rovers land safely investigation. How have our energy demands changed over time? How has this affected our community – link to coal mining in Yorkshire	Why should you never jump into a pool without first checking the depth? Why do we see rainbows? Hearing – what damages it? History of the rainbow flag linked with LGBTQ+ community Historical linking of development of the periodic table and the model of the atom – how scientific ideas change over time	British Science Week Why this is important to prevent rusting? e.g. ships, machinery on building sites etc. Hazard warning symbols – what do they mean? Understanding bee and wasp stings and how to treat them Uses of neutralisation Why peer review is important – to prevent bias Ground source heat pumps – environmental impact v cost The moon landings – did it really happen? 'Flat Earthers' What is this all about? Trusting scientific evidence Geothermal energy – Why Iceland has no CO ₂ emissions from generating electricity	What is organ donation and would you choose to do this? How can we model things that we can't see?	Should people have to pay for IVF or should the NHS pay? Is behaviour genetic or environmental? What do we mean by the term 'biological parent'? Who should be given credit for discovering the structure of DNA? Is genetic modification right or wrong? The human genome project
Stem Club every week throughout the year							



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YEAR 8		HT1	HT2	HT3	HT4	HT5	HT6
Science	Big Idea	<p>Physics What are magnets and how can we use them? What are contact forces?</p>	<p>Physics What is work done? How is heat energy transferred? How do we use waves?</p>	<p>Chemistry How are particles arranged in substances and how can this change? What happens in a chemical reaction?</p>	<p>Chemistry How can we separate mixtures? What is happening in a chemical reaction in terms of energy?</p>	<p>Biology What is breathing and why do we do it? What is digestion and why does it happen?</p>	<p>Biology What is respiration and why do living things need to do it? How do plants reproduce? How do plants make glucose?</p>
	Assessment	<p>Disciplinary knowledge Test 1 Educake homework every week Feedback point written tasks – extended response answers</p>	<p>Winter Assessment Educake homework every week Feedback point written tasks – extended response answers</p>	<p>Disciplinary knowledge Test 2 Educake homework every week Feedback point written tasks – extended response answers</p>	<p>Educake homework every week Feedback point written tasks – extended response answers</p>	<p>Disciplinary knowledge Test 3 Educake homework every week Feedback point written tasks – extended response answers</p>	<p>End of Year Assessment Educake homework every week Feedback point written tasks – extended response answers</p>
	Wider Curriculum Links	<p>How does a compass work? What causes the Northern Lights? Why do snow shoes work? Why does the pressure change as you go up in an aeroplane or dive to the deep end of the swimming pool?</p>	<p>How can insulating our homes reduce global climate change? How do we know what insulation is best for our homes? How does human hearing change as we get older? What is sonar and how is it used?</p>	<p>How does a thermometer work? What happens when something dissolves? Why are carbon monoxide detectors so important? How does deforestation and forest fires contribute to global climate change?</p>	<p>British Science Week Salter's Science Festival Who uses chromatography? How do heat packs and cool packs work? Why do industries use catalysts?</p>	<p>What is asthma? Why is exercise important? How have people's attitudes to smoking changed over time? Should smoking be illegal in the UK? How can you live a healthy lifestyle? Making choices – being informed about drugs and their effects Why have some countries legalised cannabis?</p>	<p>What happens if we don't get enough oxygen when we exercise? How has the reaction fermentation been used throughout history? Why are bees so important? How do plants spread their seeds? How have plants evolved to survive extreme environments?</p>
Environment Club every week throughout the year							



Science Curriculum Long Term Planning

Year 9		HT1	HT2	HT3	HT4	HT5	HT6
Science	Big Idea	How is the Earth structured? Where are we positioned in the universe? How are rocks cycled on Earth? How are humans affecting the climate? What does the Earth provide us with and how can we conserve it?	What does the periodic table show us?	What is a cell and are all cells the same? How do we study cells? How do things move in and out of cells?	How is energy transferred? How can we calculate energy transfers? What do we rely on for electricity generation and how has this changed?	How are particles arranged in substances? Do different reactions have different energy changes?	How do plants make glucose and what do they do with it? Are there different types of respiration?
	Assessment	Educake homework every week Feedback point written tasks – extended response answers	Winter Assessment Educake homework every week Feedback point written tasks – extended response answers	Educake homework every week Feedback point written tasks – extended response answers	Educake homework every week Feedback point written tasks – extended response answers	Educake homework every week Feedback point written tasks – extended response answers	Summer assessment Educake homework every week Feedback point written tasks – extended response answers
	Wider Curriculum Links	Why peer review is important Ground source heat pumps – environmental impact v cost The moon landings – did it really happen? ‘Flat Earthers’ What is this all about? Trusting scientific evidence Geothermal energy – Why Iceland has no CO ₂ emissions from generating electricity What can we do to try and reduce our effect on global climate change? Why should we recycle materials?	Has the periodic table always looked like this? How has the model atom changed over time and why?	Could stem cells save lives? Is stem cell research ethical? What are clones and can we clone a human? How have scientists developed the microscope so we can study cells?	What are the issues with nuclear power? Renewable energy resources, what is the future? Why are fossil fuels so bad?	How do self heating cans work? How do pocket warmers work?	How do industrial farmers exploit photosynthesis? Why do we get a stitch when we exercise?
Environment Club every week throughout the year							



Year 10		HT1	HT2	HT3	HT4	HT5	HT6
Science	Big Idea	Organisation	Bonding and Structures	Chemical Changes	Electricity	Forces	Organic Chemistry
		Physics Atomic Structure	Rates	Infection and Response	Quantitative Chemistry	Inheritance	Chemical analysis
	Assessment	Feedback point (6-mark question) approximately every 4-8 lessons End of topic Assessment Educake set weekly Retrieval practise booklets on the fundamental ideas in science – 6 booklets per half term to secure the knowledge though low stakes testing	Feedback point (6-mark question) approximately every 4-8 lessons End of topic Assessment Educake set weekly Retrieval practise booklets on the fundamental ideas in science – 6 booklets per half term to secure the knowledge though low stakes testing	Feedback point (6-mark question) approximately every 4-8 lessons End of topic Assessment Educake set weekly Retrieval practise booklets on the fundamental ideas in science – 6 booklets per half term to secure the knowledge though low stakes testing	Feedback point (6-mark question) approximately every 4-8 lessons End of topic Assessment Educake set weekly Retrieval practise booklets on the fundamental ideas in science – 6 booklets per half term to secure the knowledge though low stakes testing	Feedback point (6-mark question) approximately every 4-8 lessons End of topic Assessment Educake set weekly Retrieval practise booklets on the fundamental ideas in science – 6 booklets per half term to secure the knowledge though low stakes testing	Feedback point (6-mark question) approximately every 4-8 lessons End of topic Assessment Educake set weekly Retrieval practise booklets on the fundamental ideas in science – 6 booklets per half term to secure the knowledge though low stakes testing Mock Exam Cycle (paper 1)
Assessment Intent	Therapy session based on end of topic assessment in the week after test. Feedback grid provided and support to improve 6-mark question Educake – retrieval practise – assessment on prior knowledge – securing the knowledge Retrieval practise booklets – securing the knowledge	Therapy session based on end of topic assessment in the week after test. Feedback grid provided and support to improve 6-mark question Educake – retrieval practise – assessment on prior knowledge – securing the knowledge Retrieval practise booklets – securing the knowledge	Therapy session based on end of topic assessment in the week after test. Feedback grid provided and support to improve 6-mark question Educake – retrieval practise – assessment on prior knowledge – securing the knowledge Retrieval practise booklets – securing the knowledge	Therapy session based on end of topic assessment in the week after test. Feedback grid provided and support to improve 6-mark question Educake – retrieval practise – assessment on prior knowledge – securing the knowledge Retrieval practise booklets – securing the knowledge	Therapy session based on end of topic assessment in the week after test. Feedback grid provided and support to improve 6-mark question Educake – retrieval practise – assessment on prior knowledge – securing the knowledge Retrieval practise booklets – securing the knowledge	Therapy session based on end of topic assessment in the week after test. Feedback grid provided and support to improve 6-mark question Educake – retrieval practise – assessment on prior knowledge – securing the knowledge Retrieval practise booklets – securing the knowledge	Therapy session based on end of topic assessment in the week after test. Feedback grid provided and support to improve 6-mark question Educake – retrieval practise – assessment on prior knowledge – securing the knowledge Mock therapy done personalised to areas of weakness for each pupil Retrieval practise booklets – securing the knowledge



Wider Curriculum Links	How can we make positive lifestyle choices? What happened in Chernobyl?	What is the future of nanotechnology and new materials? How can we stay healthy?	Planning and carrying out multistep chemical reactions to make a soluble salt – working in groups/pairs How are new drugs developed? Should we test on animals?		Infertility – how has science helped? Ethical concerns? How do our bodies respond to exercise? Links to PE Embryo screening – is it right? Trip to Yorkshire Wildlife Park	What are the issues to the environment with fossil fuels? Year 10 Biologists – Required practical field trip to Cranedale (N Yorks)
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Year 11		Ht1	HT2	HT3	HT4	HT5	HT6
Science	Big Idea	Homeostasis	Ecology	Organics and chemical analysis	Chemical changes recap	GCSE EXAMS BEGIN	
		Chemistry of the atmosphere and using resources	Waves	Magnets and Infection and response	Energy recap		
	Assessment	Feedback point (6 mark question) approximately every 4-8 lessons End of topic Assessment Educake set weekly Retrieval practise booklets on the fundamental ideas in science – 6 booklets per half term to secure the knowledge though low stakes testing	Feedback point (6 mark question) approximately every 4-8 lessons End of topic Assessment Educake set weekly Retrieval practise booklets on the fundamental ideas in science – 6 booklets per half term to secure the knowledge though low stakes testing Mock Exams (Paper 2 x 3)	Educake set weekly Exam paper practise in lessons Command word focus lessons (based around extended writing questions) Retrieval practise booklets on the fundamental ideas in science – 6 booklets per half term to secure the knowledge though low stakes testing	March mock exams (Paper 1 x 3 papers) Exam paper practise in lessons Command word focus lessons (based around extended writing questions) Educake set weekly Retrieval practise booklets on the fundamental ideas in science – 6 booklets per half term to secure the knowledge though low stakes testing		
Assessment Intent	Therapy session based on end of topic assessment in the week after test.	Therapy session based on end of topic assessment in the week after test.	Educake – retrieval practise – assessment on prior knowledge – securing the knowledge	Mock therapy done personalised to areas of weakness for each pupil			



		<p>Feedback grid provided and support to improve 6 mark question Educake – retrieval practise – assessment on prior knowledge – securing the knowledge Retrieval practise booklets – securing the knowledge</p>	<p>Feedback grid provided and support to improve 6 mark question Educake – retrieval practise – assessment on prior knowledge – securing the knowledge Mock therapy done personalised to areas of weakness for each pupil Retrieval practise booklets – securing the knowledge</p>	<p>Exam paper practise – improve skills using teacher support in lessons. Staff can then focus on areas of weakness for their class Retrieval practise booklets – securing the knowledge</p>	<p>Exam paper practise – improve skills using teacher support in lessons. Staff can then focus on areas of weakness for their class Retrieval practise booklets – securing the knowledge</p>		
Wider Curriculum Links	<p>Reaction times How are humans impacting on the Earths resources?</p>						