Curriculum overview draft 1

Subject: Science	Components of science			'Core' knowledge	'Hinterland' knowledge
	What new knowledge do we introduce?			Essential knowledge needed to be successful	What do students *do* with this knowledge?
	Year 7	Year 8	Year 9		
Autumn 1 *September - October*	Biology - Cells: Living body (7.1.a) Physics - Particles: Particles (7.1.b)	Biology – Cells: How the bodyworks (8.1.a) Physics – Particles: Physical and chemical change (8.1.b)	Chemistry – Atomic structure and the periodic table (9.1.a) Biology – Cell structure and transport ; cell division (9.1.b)	Living body - Cellular basis of life; cell structure; respiration and human body systems involved in respiration. Particles – States of matter; atomic structure and separating mixtures. Speed and forces – Speed and acceleration; calculating speed; distance time graphs; balance forces and representing forces. Habitats and organisation – Food chains and webs; adaptations; impact of humans and habitats. Common reactions – Chemical reactions and rearranging atoms; word equations; evidence of chemical reactions; acids	Explicitly referenced throughout the topics give the history and story behind science and famous scientists. Topics that are extra – space; rocks and the rock cycle; pressure skeleton and muscles. WOW lessons – links to STEM organisations e.g. Sanger institute; Sea cadets – buoyancy; BT crumble robots and the Welcome Trust.
Autumn 2 *November - December*					
Spring 1 *January - February*	Physics – Forces: Speed and forces (7.2.a) Biology – Genetics: Habitats and organisation (7.2.b)	Physics – Energy: Energy (8.2.a) Biology – Genetics: Inheritance and evolution (8.2.b)	Physics – Conservation and dissipation of energy energy transfer by heating (9.2.a) Chemistry – Structure and bonding (9.2.b)		
Spring 2 *March - April*					
Summer 1 *April - May*	Chemistry – Chemical reactions: Common reactions (7.3.a) Physics – Energy – Electricity (7.3.b)	Chemistry – Chemical reactions: Chemistry on Earth (8.3.a) Physics – Energy: Magnetism and waves (8.3.b)	Biology – Biology – Organisation of the digestive system and organisation of plants and animals (9.3.a) Physics – Energy and Matter (9.3.b)		
Summer 2 *June - July*					

				and alkalis. Physical and chemical changes – physical changes; chemical changes; reactivity and displacement. Energy – Energy stores; energy pathways; units of energy and energy resources. Inheritance and evolution – Sexual and asexual reproduction; variation and evolution. Chemistry on Earth – metal ores; combustion; carbon cycle and the composition of the Earth's atmosphere. Magnetism and waves – Magnets; magnetic fields; electromagnets; types of wave and what happens when waves hit things.	
How is student progress assessed? - How do you know students are learning more? Evidence of work in booklets; key knowledge explicitly explained and shared with students. - How is knowledge assessed? MCQ pre and post test; high frequency recall questions every lesson; 50 knowledge questions per topic; three extended			*Opportunities* Booklets provide support for non specialist teachers. Booklets ensure a consistent excellent explanation that all students have access to..		*Resources* Biology, chemistry and physics mastery booklets for each topic.

writing assessments and an end of topic formal assessment. - How is the curriculum clearly the progression model – key knowledge is revisited in different topics; students are required to complete knowledge and MCQ from previous topics.	Booklets are ambitious in the quantity of key knowledge to support stretch and challenge, they are written to the top end.	

Materials to read:

https://thedignityofthethingblog.wordpress.com/2018/04/07/senior-curriculum-leadership-1-the-indirect-manifestation-of-knowledge-a-curriculum-as-narrative/

https://teacherhead.com/2019/09/27/signposting-the-hinterland-practical-ways-to-enrich-your-core-curriculum/

https://achemicalorthodoxy.wordpress.com/2019/02/01/core-and-hinterland-whats-what-and-why-it-matters/

https://impact.chartered.college/article/taking-curriculum-seriously/