Year 10 Combined Science 2025-2026

Curriculum Intent We believe that students deserve a broad and ambitious Science curriculum that enriches in skill and knowledge, which ignites curiosity and prepares them well for future learning or employment. Our curriculum is sequenced to build upon prior knowledge learnt from KS1, KS2 and KS3 and firmly embed the precise learning points that pupils need to succeed in their qualification and also to go on to further career success.

*Thursdays – Will reteach or extend pupils on prior knowledge

Term	Topic	Knowledge and Skills	Assessments	Careers	SMSC	SRE/ British Values	Literacy	Character Virtues
Autumn	Radioactivity	P1- Ionising radiation is hazardous but can be very useful. Today radioactive materials are widely used in medicine, industry, agriculture and electrical power generation RP- Alpha, beta and gamma properties.	Knowledge Retrieval Questions EXIT Ticket for Radioactivity - Marked by teacher. Pupils correct, teacher input and pupils given similar questions to demonstrate progress.	Working at a nuclear power plant. Radiographers Uses of radioactive tracers in the medical profession Uses of tracers for gas	Social- Debating the pros and cons of nuclear energy Moral – Although nuclear radiation has many useful benefits it also poses many negative and extreme consequences.	BV- Individual liberties: Pupils have the right to work independently and make choices in a safe environment. Democracy- Debating the nuclear energy use issues	Tier 2 and Tier 3 key terms to be in pupil books	Curiosity Resilience Teamwork Humanity

	Chemical Change	Understanding of chemical changes began when people began experimenting with chemical reactions in a systematic way and organizing their results logically. Knowing about these different chemical changes meant that scientists could begin to predict exactly what new substances RP: Reactions with metal carbonates, metal oxides, metal hydroxides and metals and acid	Knowledge Retrieval- to test prior knowledge Exit ticket to test progress from the topic. Pupils should correct and make improvements from further teacher input.	Used industry for the discovery of new substances by identifying what we have already discovered.	Social- Working with others in a practical setting and realise they may have different ideas.	The rule of law- the right to health and safety.	Tier 2 and Tier 3 key words to be printed and placed in books	**Teamwork** **Resilience**
	Electricity	Pupils will learn about electricity and how it can be manipulated through circuits, with emphasis on adjusting resistance, voltage, wire length and circuit type (series and parallel). <u>Required practical</u> • Resistance in a wire • V-I characteristics • Static charge (Physics only) • Electric fields (Physics only)	Knowledge Retrieval questions daily in lessons. EXIT tickets at the end of each topic. Marked by teacher. Pupils correct, teacher input and pupils given similar questions to demonstrate progress.	Possible career paths include; Electrician Mechanic Electrical engineer	Social- Pupils can work together to collect data during their required practical	Mutual respect Working together in a respectful way during the required practical	Performance able to use teamwork while working together on the required practical	Subject specific terminology. Keywords Electric current potential difference resistance Charge Series Parallel Developing vocabulary speaking

								comprehension and writing in science
	Infectious Disease	B1- Explore how we can avoid diseases by reducing contact with them, as well as how the body uses barriers against pathogens. Once inside the body our immune system is triggered which is usually strong enough to destroy the pathogen and prevent disease.	Knowledge Retrieval questions daily in lessons. EXIT tickets at the end of each topic.	Discovery of new drugs; Drug Development and Testing; developing vaccines; Evaluating healthcare sanitation; Research into antibiotic resistance	Spiritual- learning about scientific skills used to identify the world around them. Social- Working with others in a practical setting and realise they may have different ideas.	BV- Democracy- pupils learn to work in groups and accept other's views The rule of law- the right to health and safety SRE- Sexually transmitted disease specifically HIV, AIDS and Gonorrhoea	Tier 2 and Tier 3 key words to be printed and placed in books Texts to read on Semmelweis and the discovery of antibiotics.	Wisdom, knowledge courage Resilience
Christmas Break								
Spring	Homeostasis	Explore the structure and function of the nervous system and how it can bring about fast responses. We will also explore the hormonal system which usually brings about much slower changes Separate Science ONLY- The Brain and discoveries in the brain	Knowledge Retrieval Exit ticket at the end of the topic. Pupils to correct,	Endocrinologist	Social Moral- Use of natural resources	BV- Individual liberties: Pupils have the right to work	Tier 2 and tier 3 words to be glued into books and referred to	Wisdom, knowledge courage Resilience

			reteach and then demonstrate			independently and make choices in a safe environment.	throughout topic	
	Energy Endo/Exo	Energy changes are an important part of chemical reactions. The interaction of particles often involves transfers of energy due to the breaking and formation of bonds	Knowledge Retrieval Exit ticket at the end of the topic. Pupils to correct, reteach and then demonstrate	Laboratory Engineering new substances	Social- Working with others in a practical setting and realise they may have different ideas.	Individual liberties: Pupils have the right to work independently and make choices in a safe environment.	Tier 2 and tier 3 words to be glued into books and referred to throughout topic	Wisdom, knowledge courage Resilience
	Electrolysis	Predicting aqueous and molten products. Uses of electrolysis. Cost of process.	Exit ticket	Laboratory Engineering new substances	Social- Working with others in a practical setting and realise they may have different ideas.	Individual liberties: Pupils have the right to work independently and make choices in a safe environment.	Tier 2 and tier 3 words to be glued into books and referred to throughout topic	Wisdom, knowledge courage Resilience
Easter Break								

Summer	Forces	Engineers analyse forces when designing a great variety of machines and instruments, from road bridges and fairground rides to atomic force microscopes. Anything mechanical can be analysed in this way	Knowledge Retrieval Exit ticket at the end of the topic. Pupils to correct, reteach and then demonstrate	Engineers Racing cars Setting speed limits Collision Safety	Social- Working with others in a practical setting and realise they may have different ideas.	The rule of law- the right to health and safety	Tier 2 and tier 3 words to be glued into books and referred to throughout topic	Wisdom, knowledge courage Resilience Reflection Courage
	Rates of reaction	How to calculate rate of reaction Units Factors such as pressure, concentration, catalyst(also in C1 energy change), temperature and surface area affect rate of reaction. Collision Theory Application to industry HIGHER:	Knowledge Retrieval Exit ticket at the end of the topic. Pupils to correct, reteach and then demonstrate	Laboratory Drug production Production of all chemicals in industry and optimal conditions to reduce waste and maximise profit	Social- Working with others in a practical setting and realise they may have different ideas.	The rule of law- the right to health and safety	Tier 2 and tier 3 words to be glued into books and referred to throughout topic	Wisdom, knowledge courage Resilience Reflection Courage
	Electromagnetism	Electromagnetic effects are used in a wide variety of devices. That when current flows around a magnet it can produce movement.	Exit Ticket for Magnetism and Electromagnetism Complete Physics Paper 1	Engineers make use of the fact that a magnet moving in a coil can produce electric current. Using the Fleming's rule for the motor effect			Tier 2 and Tier 3 key terms to be printed and glued in books	
	Crude Oil	The chemistry of carbon compounds is so important that it forms a separate branch of chemistry. A great variety of carbon compounds is possible because carbon atoms can form chains and rings linked by C-C bonds	Knowledge Retrieval Exit ticket at the end of the topic. Pupils to correct, reteach and	Chemists are able to take organic molecules and modify them in many ways to make new and useful			Tier 2 and tier 3 words to be glued into books and referred to throughout topic	Wisdom, knowledge courage Resilience Reflection Courage

			then demonstrate	materials such as polymers, pharmaceuticals, perfumes and flavourings, dyes and detergents.				