

## **Year 10 Physics**

Subject and Year	Autumn Yogr 10	Autumn 2 Spring		Summer 1	Summer 2
Group Topic/Unit to be	Year 10	Year 10 Year 1	0 Year 10	Year 10	Year 10
studied	Atomic Structure & Radioactivity	Electricity I (circuits)	Energy	Electricity II (using electricity)	Magnetism & Electromagnetism
Core Knowledge (Substantive knowledge)	<ul> <li>The nuclear model (structure and development)</li> <li>Radioactive decay and half life</li> <li>Types of radiation</li> <li>Contamination and irradiation</li> <li>Background radiation (separate only)</li> <li>Medical uses for radiation (separate only)</li> <li>Nuclear fission and fusion (separate only)</li> </ul>	Circuit symbols and diagram Measuring, defining, and calculating electrical quantities (current & PD) Resistance RP3: Resistance of a wire and resistors in parallel V-I graphs RP4: V-I graphs for a fixed resistor, filament bulb, and diode LDRs and thermistors	<ul> <li>Conservation of energy</li> <li>Specific heat capacity</li> <li>RP1: Measuring specific heat capacity</li> <li>Power</li> <li>Energy efficiency</li> <li>Energy Resources</li> <li>Insulation (separate only)</li> </ul>	<ul> <li>AC and DC</li> <li>Electrical Safety</li> <li>Electrical energy and power</li> <li>The National Grid</li> <li>Static electricity (separate only)</li> <li>Electric fields (separate only)</li> </ul>	<ul> <li>Permanent and induced magnetism</li> <li>Magnetic materials</li> <li>Magnetic Fields</li> <li>The Motor Effect and DC motors (HT only)</li> <li>The generator effect and generators (separate only)</li> <li>Transformers (separate only)</li> </ul>
Core Skills (Disciplinary	- Use models to develop	- Use models to help explain or predict phenonmena.	- Use appropriate techniques, apparatus, and materials during	- Understand, use, and convert prefixed	- Use appropriate techniques, apparatus,
knowledge)	understanding and	- Use appropriate techniques,	laboratory work, paying	and SI units.	and materials during
	an appreciation of	apparatus, and materials durin	· _ · _ · · _ · _ · · _ ·	- Complete	laboratory work,
	how scientific	laboratory work, paying	- Present data using appropriate	calculations making	paying attention to
	thinking and theories	attention to health and safety.	methods, including tables and	use of standard form.	health and safety.
	develop over time.	- Identify anomalies and apply	graphs including bar charts and	- Apply mathematical	- Identify anomalies
	- Understand that	mathematical concepts to	pie charts.	concepts to	and apply
	scientific methods	calculate means.	- Understand, use, and convert	substitute in/	mathematical concepts
	and theories develop	- Present data using	prefixed and SI units.	rearrange equations	to calculate means.
	as earlier	appropriate methods, including	- Complete calculations making	to calculate relevant	- Present data using
	explanations are	tables and graphs including	use of standard form.	physical quantities.	appropriate methods,



## **Curriculum Map: Science**

## **Success for Everyone**



Assessment	End of Unit assessment (MCQ/short answer/long answer) with interleaved content from previous units					
	streams.	accurate conclusions.			abstract concepts to solve problems (Fleming's left hand law)	
	different data	- Interpret data to draw			representations of	
	taking into account	variables.			- make use physical	
	hazard of a scenario,	dependent and control			accurate conclusions.	
	relative risk or	identifying independent,			quantitiesInterpret data to draw	
	conclusions Evaluate the	scientific enquiries to test predictions, including			relevant physical	
	draw accurate	most appropriate types of			equations to calculate	
	- Interpret data to	- Select, plan and carry out the			in/ rearrange	
	half life.	understanding.			concepts to substitute	
	ratio changes and	scientific knowledge and	accurate conclusions.		- Apply mathematical	
	- Apply ideas about	- Make predictions using	- Interpret data to draw		form.	
	lines of best fit.	physical quantities.	variables.		making use of standard	
	(exponential) curved	equations to calculate relevant	dependent and control		- Complete calculations	
	including	to substitute in/ rearrange	identifying independent,		units.	
	tables and graphs	- Apply mathematical concepts	predictions, including		convert prefixed and SI	
	methods, including	use of standard form.	scientific enquiries to test		- Understand, use, and	
	appropriate	- Complete calculations making	most appropriate types of		and linear.	
	- Present data using	prefixed and SI units.	- Select, plan and carry out the		directly proportional	
	and peer review	- Understand, use and convert	understanding.		relationships, including	
	publishing results	proportional, and linear.	scientific knowledge and		mathematical	
	together with the importance of	relationships, including directly proportional, inversely	physical quantities Make predictions using		fit. - Recognise	
	evidence and ideas,	- Recognise mathematical	equations to calculate relevant	conclusions.	straight lines of best	
	account of new	fit.	to substitute in/rearrange	draw accurate	graphs including	
	modified to take	straight and curved lines of best	- Apply mathematical concepts	- Interpret data to	including tables and	