## Physics Curriculum Overview – Year 13

Sequencing of topics	What knowledge will students develop? (Including key terminology)	What skills will students develop? (Including literacy & numeracy)	Assessment opportunities	Homework opportunities	Personal development (Ursuline Values, Catholic Social Teaching, Cultural Capital, Cross- curricular, Careers)	Curriculum links
Fields and their consequences	<ul> <li>Fields</li> <li>Gravitational fields</li> <li>Newton's law</li> <li>Gravitational field strength</li> <li>Gravitational potential</li> <li>Orbits of planets and satellites</li> <li>Electric fields</li> <li>Coulomb's law and Electric field strength</li> <li>Electric potential</li> <li>Capacitance</li> <li>Parallel plate capacitor</li> <li>Energy stored by a capacitor</li> <li>Capacitor charge and discharge</li> </ul>	<ul> <li>Use a variety of models such as representational, spatial, descriptive, computational and mathematical to solve problems, make predictions and to develop scientific explanations and understanding of familiar and unfamiliar facts</li> <li>Evaluate risks both in practical science and the wider societal context, including perception of risk in relation to data and consequences</li> <li>Plan experiments or devise procedures to make observations, produce or characterise a substance, test hypotheses, check data or explore phenomena</li> <li>Apply a knowledge of a range of techniques, instruments, apparatus, and materials to select those appropriate to the experiment</li> <li>Carry out experiments appropriately having due regard for the correct manipulation of apparatus, the accuracy of measurements and health and safety considerations</li> </ul>	<ul> <li>Targeted questioning</li> <li>Mid-topic assessment</li> <li>End of topic assessment</li> </ul>	<ul> <li>Worksheets</li> <li>Flipped learning activities</li> <li>Past exam questions</li> <li>Research</li> <li>Practical write-ups</li> <li>Isaac Physics</li> </ul>	<ul> <li>Grateful for waves enabling us to be able to communicate</li> <li>Discerning when analysing data presented to us and joyful at the possibilities of science</li> <li>Leading others in pursuit of justice when planning and carrying out a practical</li> <li>Service and sacrifice when we recognise the scientific work that has been done before us</li> <li>Loving and compassionate when we consider how scientific advancements can be used to help others</li> </ul>	KS1/2 • Gravity • Magnets KS3 • Forces • Electromagnetism KS4 • Forces • Magnetism and electromagnetism • Electric fields KS5

of topics       will students develop? (Including key terminology)       (Including literacy & numeracy)       opportunities       opportunities       development (Ursuline Values, Catholic Social Teaching, Cultural Capital, Cross- curricular, Careers) <ul> <li>Make and record observations and measurements using a range of apparatus and methods</li> <li>Evaluate methods and suggest possible improvements and further investigations</li> <li>Presenting observations and other data using appropriate methods</li> <li>Interpreting observations and other data using appropriate methods</li> <li>Interpreting observations and other data using appropriate methods</li> <li>Interpreting observations and other data (presented in verbal, diagrammatic, graphical, symbolic or numerical form), including identifying patterns and trends, making inferences and drawing conclusions</li> <li>Presenting reasoned evaluations</li> <li>Art</li> <li>Geography</li> </ul>	Sequencing	What knowledge	What skills will students develop?	Assessment	Homework	Personal	Curriculum links
develop? (Including key terminology) <ul> <li>(Ursuline Values, Catholic Social Teaching, Cultural Capital, Cross- curricular, Careers)</li> <li>Make and record observations and measurements using a range of apparatus and methods</li> <li>Evaluate methods and suggest possible improvements and further investigations</li> <li>Presenting observations and other data using appropriate methods</li> <li>Interpreting observations and other data (presented in verbal, diagrammatic, graphical, symbolic or numerical form), including identifying patterns and trends, making inferences and drawing conclusions</li> <li>Presenting observations</li> </ul> <ul> <li>Social Output</li> <li>Social Output</li> <li>Social Output</li> <li>Moral</li> <li>Cultural</li> </ul>	of topics	will students	(Including literacy & numeracy)	opportunities	opportunities	development	
key terminology)       Catholic Social Teaching, Cultural Capital, Cross- curricular, Careers)         • Make and record observations and measurements using a range of apparatus and methods       • Dignity of God's people         • Evaluate methods and suggest possible improvements and further investigations       • Community and participation         • Presenting observations and other data using appropriate methods       • Dignity in work         • Presenting observations and other data (gresented in verbal, diagrammatic, graphical, symbolic or numerical form), including identifying patterns and trends, making inferences and drawing conclusions       • Solidarity • Art		develop? (Including				(Ursuline Values,	
Image: Construction of the second		key terminology)				Catholic Social	
Capital, Cross- curricular, Careers)         Make and record observations and measurements using a range of apparatus and methods       Dignity of God's people         Evaluate methods and suggest possible improvements and further investigations       Community and participation         Presenting observations and other data using appropriate methods       Dignity in work         Interpreting observations and other data (presented in verbal, diagrammatic, graphical, symbolic or numerical form), including identifying patterns and trends, making inferences and drawing conclusions       Social Output						Teaching, Cultural	
Image: Construction of the second observations and measurements using a range of apparatus and methods       Dignity of God's people         Image: Construction of the second observations and measurements using a range of apparatus and methods       Community and participation         Image: Construction of the second observations and the second observations and other data using appropriate methods       Care for creation         Image: Construction of the second observations and other data using appropriate methods       Presenting observations and other data (presented in verbal, diagrammatic, graphical, symbolic or numerical form), including identifying patterns and trends, making inferences and drawing conclusions       Social         Image: Construction of the second observations and the second observations and other data (presented in verbal, diagrammatic, graphical, symbolic or numerical form), including identifying patterns and trends, making inferences and drawing conclusions       Social         Image: Construction of the second observations and the second observation observations and the second observation						Capital, Cross-	
<ul> <li>Make and record observations and measurements using a range of apparatus and methods</li> <li>Evaluate methods and suggest possible improvements and further investigations</li> <li>Presenting observations and other data using appropriate methods</li> <li>Interpreting observations and other data (presented in verbal, diagrammatic, graphical, symbolic or numerical form), including identifying patterns and trends, making</li> <li>Presenting reasoned explanations</li> </ul>						curricular. Careers)	
<ul> <li>Indication record values of measurements using a range of apparatus and methods</li> <li>Evaluate methods and suggest possible improvements and further investigations</li> <li>Presenting observations and other data using appropriate methods</li> <li>Interpreting observations and other data (presented in verbal, diagrammatic, graphical, symbolic or numerical form), including identifying patterns and trends, making inferences and drawing conclusions</li> <li>Presenting reasoned explanations</li> </ul>			<ul> <li>Make and record observations and</li> </ul>			<ul> <li>Dignity of God's</li> </ul>	
<ul> <li>apparatus and methods</li> <li>Evaluate methods and suggest possible improvements and further investigations</li> <li>Presenting observations and other data using appropriate methods</li> <li>Interpreting observations and other data (presented in verbal, data (presented in verbal, diagrammatic, graphical, symbolic or numerical form), including identifying patterns and drawing conclusions</li> <li>Presenting reasoned explanations</li> <li>Community and participation</li> <li>Care for creation</li> <li>Dignity in work</li> <li>Peace and reconciliation</li> <li>Solidarity</li> <li>Social</li> <li>Moral</li> <li>Cultural</li> <li>Art</li> <li>Geography</li> </ul>			measurements using a range of			people	
<ul> <li>Evaluate methods and suggest possible improvements and further investigations</li> <li>Presenting observations and other data using appropriate methods</li> <li>Interpreting observations and other data (presented in verbal, data (presented in verbal, diagrammatic, graphical, symbolic or numerical form), including identifying patterns and trends, making</li> <li>Presenting reasoned explanations</li> </ul>			apparatus and methods			• Community and	
<ul> <li>possible improvements and further investigations</li> <li>Presenting observations and other data using appropriate methods</li> <li>Interpreting observations and other data (presented in verbal, diagrammatic, graphical, symbolic or numerical form), including identifying patterns and trends, making</li> <li>Presenting reasoned explanations</li> <li>Care for creation</li> <li>Dignity in work</li> <li>Peace and reconciliation</li> <li>Solidarity</li> <li>Solidarity</li> <li>Personal</li> <li>Social</li> <li>Cultural</li> <li>Geography</li> </ul>			<ul> <li>Evaluate methods and suggest</li> </ul>			participation	
<ul> <li>investigations</li> <li>Presenting observations and other data using appropriate methods</li> <li>Interpreting observations and other data (presented in verbal, diagrammatic, graphical, symbolic or numerical form), including identifying patterns and trends, making inferences and drawing conclusions</li> <li>Presenting reasoned explanations</li> <li>Dignity in work</li> <li>Peace and reconciliation</li> <li>Solidarity</li> <li>Personal</li> <li>Social</li> <li>Cultural</li> <li>Art</li> </ul>			possible improvements and further			<ul> <li>Care for creation</li> </ul>	
<ul> <li>Presenting observations and other data using appropriate methods</li> <li>Interpreting observations and other data (presented in verbal, diagrammatic, graphical, symbolic or numerical form), including identifying patterns and trends, making inferences and drawing conclusions</li> <li>Presenting reasoned explanations</li> <li>Presenting reasoned explanations</li> </ul>			investigations			<ul> <li>Dignity in work</li> </ul>	
data using appropriate methods       reconciliation         Interpreting observations and other       Solidarity         data (presented in verbal,       Personal         diagrammatic, graphical, symbolic or       Social         numerical form), including identifying       Moral         patterns and trends, making       Cultural         inferences and drawing conclusions       Art         Or Presenting reasoned explanations       Geography			<ul> <li>Presenting observations and other</li> </ul>			• Peace and	
<ul> <li>Interpreting observations and other data (presented in verbal, diagrammatic, graphical, symbolic or numerical form), including identifying patterns and trends, making inferences and drawing conclusions</li> <li>Art</li> <li>Geography</li> </ul>			data using appropriate methods			reconciliation	
data (presented in verbal,       • Personal         diagrammatic, graphical, symbolic or       • Social         numerical form), including identifying       • Moral         patterns and trends, making       • Cultural         inferences and drawing conclusions       • Art			<ul> <li>Interpreting observations and other</li> </ul>			○ Solidarity	
diagrammatic, graphical, symbolic or       • Social         numerical form), including identifying       • Moral         patterns and trends, making       • Cultural         inferences and drawing conclusions       • Art         • Presenting reasoned explanations       • Geography			data (presented in verbal,			<ul> <li>Personal</li> </ul>	
numerical form), including identifying       • Moral         patterns and trends, making       • Cultural         inferences and drawing conclusions       • Art         • Presenting reasoned explanations       • Geography			diagrammatic, graphical, symbolic or			o Social	
patterns and trends, making       • Cultural         inferences and drawing conclusions       • Art         • Presenting reasoned explanations       • Geography			numerical form), including identifying			• Moral	
inferences and drawing conclusions O Art			patterns and trends, making			• Cultural	
Presenting reasoned explanations     Geography			inferences and drawing conclusions			○ Art	
			<ul> <li>Presenting reasoned explanations</li> </ul>			<ul> <li>Geography</li> </ul>	
including relating data to hypotheses O Maths			including relating data to hypotheses			• Maths	
<ul> <li>Being objective, evaluating data in</li> </ul>			<ul> <li>Being objective, evaluating data in</li> </ul>				
terms of accuracy, precision,			terms of accuracy, precision,				
repeatability and reproducibility and			repeatability and reproducibility and				
identifying potential sources of			identifying potential sources of				
random and systematic error			random and systematic error				
<ul> <li>Use scientific vocabulary, terminology</li> </ul>			• Use scientific vocabulary, terminology				
and definitions			and definitions				
<ul> <li>Recognise the importance of scientific</li> </ul>			<ul> <li>Recognise the importance of scientific</li> </ul>				
quantities and understand now they			quantities and understand now they				
are determined			are determined				
O Use Si units (eg kg, g, mg; km, m, mm;			• Use Si units (eg kg, g, mg; km, m, mm;				
KJ, J) dilu iOPAC cilettical			NJ, JJ dilu IUPAC cilemildi nomonelaturo unloss inannronriato				
= 1  Is a prefixes and powers of ten for			$\sim$ Use prefixes and powers of ten for				
orders of magnitude (eg tera giga			orders of magnitude leg tera gigs				

Sequencing	What knowledge	What skills will students develop?	Assessment	Homework	Personal	Curriculum links
of topics	will students	(Including literacy & numeracy)	opportunities	opportunities	development	
	develop? (Including				(Ursuline Values,	
	key terminology)					
					Capital, Cross-	
					curricular, Careers)	
		mega, kilo, centi, milli, micro and nano)				
		<ul> <li>Use an appropriate number of significant figures in calculation</li> </ul>				

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of topics	will students	(Including literacy & numeracy)	opportunities	opportunities	development	
	develop? (Including				(Ursuline Values,	
	key terminology)				Catholic Social	
					Teaching, Cultural	
					Capital, Cross-	
					curricular, Careers)	
		Autumn I	Half Term 2	•		
Fields and	<ul> <li>Capacitance</li> </ul>	$\circ$ Understand how scientific methods	<ul> <li>Targeted</li> </ul>	<ul> <li>Worksheets</li> </ul>	$\circ$ United in harmony	KS1/2
their	<ul> <li>Parallel plate</li> </ul>	and theories develop over time	questioning	<ul> <li>Flipped</li> </ul>	when planning and	<ul> <li>Gravity</li> </ul>
consequences	capacitor	$\circ$ Use a variety of models such as	<ul> <li>Mid-topic</li> </ul>	learning	carrying out a	<ul> <li>Magnets</li> </ul>
	$\circ$ Energy stored by a	representational, spatial, descriptive,	assessment	activities	practical	
Nuclear	capacitor	computational and mathematical to	<ul> <li>End of topic</li> </ul>	<ul> <li>Past exam</li> </ul>	<ul> <li>Discerning when</li> </ul>	KS3
physics	<ul> <li>Capacitor charge</li> </ul>	solve problems, make predictions and	assessment	questions	analysising data <b>and</b>	<ul> <li>Forces</li> </ul>
	and discharge	to develop scientific explanations and		<ul> <li>Research</li> </ul>	joyful at the	<ul> <li>Electromagnetism</li> </ul>
	<ul> <li>Magnetic fields</li> </ul>	understanding of familiar and		<ul> <li>Practical</li> </ul>	possibilities of	<ul> <li>Atomic structure</li> </ul>
	<ul> <li>Magnetic flux</li> </ul>	unfamiliar facts		write-ups	science	
	density	• Evaluate risks both in practical science		<ul> <li>Isaac Physics</li> </ul>	<ul> <li>Leading others in</li> </ul>	KS4
	<ul> <li>Moving charges in</li> </ul>	and the wider societal context,			pursuit of justice	o Forces
	a magnetic field	including perception of risk in relation			when planning and	<ul> <li>Magnetism and</li> </ul>
	<ul> <li>Magnetic flux and</li> </ul>	to data and consequences			carrying out a	electromagnetism
	flux linkage	<ul> <li>Use scientific theories and</li> </ul>			practical	<ul> <li>Electric fields</li> </ul>
	<ul> <li>Electromagnetic</li> </ul>	explanations to develop hypotheses			<ul> <li>Service and sacrifice</li> </ul>	<ul> <li>Atomic structure</li> </ul>
	induction	<ul> <li>Plan experiments or devise</li> </ul>			when we recognise	
	$\circ$ Alternating	procedures to make observations,			the scientific work	KS5
	currents	produce or characterise a substance,			that has been done	
	$\circ$ The operation of a	test hypotheses, check data or			before us	
	transformer	explore phenomena			• Care for creation	
	<ul> <li>Radioactivity</li> </ul>	<ul> <li>Apply a knowledge of a range of</li> </ul>			• Community and	
	o Rutherford	techniques, instruments, apparatus,			participation	
	scattering	and materials to select those			<ul> <li>Dignity of God's</li> </ul>	
	$\circ \alpha$ , $\beta$ and $\gamma$ radiation	appropriate to the experiment			people	
	<ul> <li>Radioactive decay</li> </ul>	<ul> <li>Carry out experiments appropriately</li> </ul>			<ul> <li>Solidarity</li> </ul>	
	<ul> <li>Nuclear instability</li> </ul>	having due regard for the correct			• Personal	
	<ul> <li>Nuclear radius</li> </ul>	manipulation of apparatus, the			<ul> <li>Social</li> </ul>	
	<ul> <li>Mass and energy</li> </ul>				<ul> <li>Physical</li> </ul>	

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_	develop? (Including				(Ursuline Values,	
	key terminology)				Catholic Social	
	, ,				Teaching, Cultural	
					Canital, Cross-	
					curricular Careers)	
	- Induced fission	accuracy of measurements and health				
		accuracy of measurements and nearth				
	o salety aspects	<ul> <li>Make and record observations and</li> </ul>			• Geography	
		measurements using a range of				
		annaratus and methods				
		$\sim$ Evaluate methods and suggest				
		nossible improvements and further				
		investigations				
		<ul> <li>Presenting observations and other</li> </ul>				
		data using appropriate methods				
		$\circ$ Interpreting observations and other				
		data (presented in verbal,				
		diagrammatic, graphical, symbolic or				
		numerical form), including identifying				
		patterns and trends, making				
		inferences and drawing conclusions				
		<ul> <li>Presenting reasoned explanations</li> </ul>				
		including relating data to hypotheses				
		<ul> <li>Being objective, evaluating data in</li> </ul>				
		terms of accuracy, precision,				
		repeatability and reproducibility and				
		identifying potential sources of				
		random and systematic error				
		$\circ$ Use scientific vocabulary, terminology				
		and definitions				
		$\circ~$ Recognise the importance of scientific				
		quantities and understand how they				
		are determined				
		<ul> <li>Use SI units (eg kg, g, mg; km, m, mm;</li> </ul>				
		kJ, J) and IUPAC chemical				
		nomenclature unless inappropriate				

Sequencing	What knowledge	What skills will students develop?	Assessment	Homework	Personal	Curriculum links
of topics	will students	(Including literacy & numeracy)	opportunities	opportunities	development	
	develop? (Including				(Ursuline Values,	
	key terminology)				<b>Catholic Social</b>	
					Teaching, Cultural	
					Capital, Cross-	
					curricular, Careers)	
		<ul> <li>Use prefixes and powers of ten for orders of magnitude (eg tera, giga, mega, kilo, centi, milli, micro and nano)</li> <li>Interconvert units</li> <li>Use an appropriate number of significant figures in calculation</li> </ul>			curricular, Careers)	

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of topics	will students	(Including literacy & numeracy)	opportunities	opportunities	development	
	develop? (Including				(Ursuline Values,	
	key terminology)				Catholic Social	
					Teaching, Cultural	
					Capital, Cross-	
					curricular, Careers)	
		Spring H	alf Term 1	•		
Nuclear	<ul> <li>Induced fission</li> </ul>	<ul> <li>Use a variety of models such as</li> </ul>	<ul> <li>largeted</li> </ul>	<ul> <li>Worksheets</li> </ul>	• Grateful for waves	KS1/2
physics	• Safety aspects	representational, spatial, descriptive,	questioning	<ul> <li>Flipped</li> </ul>	enabling us to be	o Light
Turning	• The discovery of	computational and mathematical to		learning	able to communicate	KC2
Turning	the electron	solve problems, make predictions and	assessment	activities	• Discerning when	KS3
points in	• Cathode rays	to develop scientific explanations and	• End of topic	<ul> <li>Past exam</li> </ul>	analysing data	<ul> <li>Atomic structure</li> <li>Movies</li> </ul>
physics	o Thermionic	understanding of familiar and	assessment	questions	presented to us and	o waves
	emission of	uniamiliar facts		<ul> <li>Research</li> <li>Bractical</li> </ul>	Joyrul at the	VCA
	electrons	o Evaluate fisks both in practical science				K54
	<ul> <li>Specific charge of</li> </ul>	and the wider societal context,		write-ups	Science	• Atomic structure
	the electron	to data and consequences		O ISAAC PHYSICS	• Leading others in	O Waves
	<ul> <li>Principle of</li> </ul>	lo data and consequences			pursuit of justice	KCE
	IVIIIKan s	o Plan experiments of devise			corrying out o	627
	determination of	produce or characterise a substance			carrying out a	
	the electronic	tost hypotheses, sheek data or			$\sim$ Service and sacrifice	
	charge, e	explore phenomena			• Service and sacrifice	
		$\sim$ Apply a knowledge of a range of			the scientific work	
		techniques instruments apparatus			that has been done	
	o Newlon's	and materials to select those			hefore us	
	of light	annonriate to the experiment			$\circ$ Loving and	
	<ul> <li>Significance of</li> </ul>	$\circ$ Carry out experiments appropriately			comnassionate	
		having due regard for the correct			when we consider	
	slits experiment	manipulation of apparatus, the			how scientific	
	$\sim$ Flectromagnetic	accuracy of measurements and health			advancements can	
		and safety considerations			be used to help	
	$\circ$ The discovery of	<ul> <li>Make and record observations and</li> </ul>			others	
	nhotoelectricity	measurements using a range of			• Dignity of God's	
	photocicotholty	apparatus and methods			people	

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	develop? (Including				(Ursuline Values,	
	key terminology)				Catholic Social	
					Teaching, Cultural	
					Capital, Cross-	
					curricular, Careers)	
	• Wave-particle	<ul> <li>Evaluate methods and suggest</li> </ul>			• Community and	
	duality and	possible improvements and further			participation	
	Electron	investigations			• Care for creation	
	microscopes	<ul> <li>Presenting observations and other</li> </ul>			<ul> <li>Dignity in work</li> </ul>	
	<ul> <li>Special relativity</li> </ul>	data using appropriate methods			<ul> <li>Peace and</li> </ul>	
	<ul> <li>The Michelson-</li> </ul>	<ul> <li>Interpreting observations and other</li> </ul>			reconciliation	
	Morley experiment	data (presented in verbal,			• Solidarity	
	• Einstein's theory of	diagrammatic, graphical, symbolic or			• Personal	
	special relativity	numerical form), including identifying			• Social	
	• Time dilation	patterns and trends, making			• Moral	
	<ul> <li>Length contraction</li> </ul>	Inferences and drawing conclusions			• Cultural	
	<ul> <li>Mass and energy</li> </ul>	<ul> <li>Presenting reasoned explanations</li> <li>including relating data to hypotheses</li> </ul>			• Art	
		Roing objective, evaluating data in				
		terms of accuracy, precision				
		repeatability and reproducibility and				
		identifying potential sources of				
		random and systematic error				
		<ul> <li>Use scientific vocabulary, terminology</li> </ul>				
		and definitions				
		• Recognise the importance of scientific				
		quantities and understand how they				
		are determined				
		<ul> <li>Use SI units (eg kg, g, mg; km, m, mm;</li> </ul>				
		kJ, J) and IUPAC chemical				
		nomenclature unless inappropriate				
		<ul> <li>Use prefixes and powers of ten for</li> </ul>				
		orders of magnitude (eg tera, giga,				
		mega, kilo, centi, milli, micro and				
		nano)				
		<ul> <li>Interconvert units</li> </ul>				

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	develop? (Including				(Ursuline Values,	
	key terminology)				Catholic Social	
					Canital Cross-	
					curricular, Careers)	
		<ul> <li>Use an appropriate number of</li> </ul>				
		significant figures in calculation				

Sequencing of topics	What knowledge will students	What skills will students develop? (Including literacy & numeracy)	Assessment opportunities	Homework opportunities	Personal development	Curriculum links
	develop? (Including				(Ursuline Values,	
	key terminology)				Catholic Social	
					Teaching, Cultural	
					Capital, Cross-	
					curricular, Careers)	
		Spring H	alf Term 2			
Turning points in physics	<ul> <li>Wave-particle duality</li> <li>Electron microscopes</li> <li>Special relativity</li> <li>The Michelson- Morley experiment</li> <li>Einstein's theory of special relativity</li> <li>Time dilation</li> <li>Length contraction</li> <li>Mass and energy</li> </ul>	<ul> <li>Use a variety of models such as representational, spatial, descriptive, computational and mathematical to solve problems, make predictions and to develop scientific explanations and understanding of familiar and unfamiliar facts</li> <li>Evaluate risks both in practical science and the wider societal context, including perception of risk in relation to data and consequences</li> <li>Plan experiments or devise procedures to make observations, produce or characterise a substance, test hypotheses, check data or explore phenomena</li> <li>Apply a knowledge of a range of techniques, instruments, apparatus, and materials to select those appropriate to the experiment</li> <li>Carry out experiments appropriately having due regard for the correct manipulation of apparatus, the accuracy of measurements and health and safety considerations</li> <li>Make and record observations and measurements using a range of apparatus and methods</li> </ul>	<ul> <li>Targeted questioning</li> <li>Mid-topic assessment</li> <li>End of topic assessment</li> </ul>	<ul> <li>Worksheets</li> <li>Flipped learning activities</li> <li>Past exam questions</li> <li>Research</li> <li>Practical write-ups</li> <li>Isaac Physics</li> </ul>	<ul> <li>Grateful for waves enabling us to be able to communicate</li> <li>Discerning when analysing data presented to us and joyful at the possibilities of science</li> <li>Leading others in pursuit of justice when planning and carrying out a practical</li> <li>Service and sacrifice when we recognise the scientific work that has been done before us</li> <li>Loving and compassionate when we consider how scientific advancements can be used to help others</li> <li>Dignity of God's people</li> </ul>	KS1/2 o Light KS3 o Waves KS4 o Waves

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of topics	will students	(Including literacy & numeracy)	opportunities	opportunities	development	
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	key terminology)				Catholic Social	
	,				Teaching, Cultural	
					Capital. Cross-	
					curricular, Careers)	
		<ul> <li>Evaluate methods and suggest</li> </ul>			$\circ$ Community and	
		nossible improvements and further			narticination	
		investigations			• Care for creation	
		<ul> <li>Presenting observations and other</li> </ul>			• Dignity in work	
		data using appropriate methods			<ul> <li>Peace and</li> </ul>	
		<ul> <li>Interpreting observations and other</li> </ul>			reconciliation	
		data (presented in verbal,			• Solidarity	
		diagrammatic, graphical, symbolic or			• Personal	
		numerical form), including identifying			○ Social	
		patterns and trends, making			• Moral	
		inferences and drawing conclusions			• Cultural	
		<ul> <li>Presenting reasoned explanations</li> </ul>			○ Art	
		including relating data to hypotheses			<ul> <li>Geography</li> </ul>	
		<ul> <li>Being objective, evaluating data in</li> </ul>			• Maths	
		terms of accuracy, precision,				
		repeatability and reproducibility and				
		identifying potential sources of				
		random and systematic error				
		• Use scientific vocabulary, terminology				
		and definitions				
		• Recognise the importance of scientific				
		quantities and understand how they				
		are determined				
		• Use SI units (eg kg, g, mg; km, m, mm;				
		kJ, J) and IUPAC chemical				
		Lico profixes and powers of top for				
		orders of magnitude (og toral gigs				
		mega kilo centi milli micro and				
		nano)				
		$\circ$ Interconvert units				
		<ul> <li>Interconvert units</li> </ul>				

Sequencing	What knowledge	What skills will students develop?	Assessment	Homework	Personal	Curriculum links
of topics	will students	(Including literacy & numeracy)	opportunities	opportunities	development	
	develop? (Including				(Ursuline Values,	
	key terminology)				<b>Catholic Social</b>	
					Teaching, Cultural	
					Capital, Cross-	
					curricular, Careers)	
		<ul> <li>Use an appropriate number of</li> </ul>				
		significant figures in calculation				

Sequencing of topics	What knowledge will students develop? (Including	What skills will students develop? (Including literacy & numeracy)	Assessment opportunities	Homework opportunities	Personal development (Ursuline Values,	Curriculum links
	key terminology)				Catholic Social Teaching, Cultural Capital, Cross-	
					curricular, Careers)	
Revision		<ul> <li>Use a variety of models such as representational, spatial, descriptive, computational and mathematical to solve problems, make predictions and to develop scientific explanations and understanding of familiar and unfamiliar facts</li> <li>Evaluate risks both in practical science and the wider societal context, including perception of risk in relation to data and consequences</li> <li>Plan experiments or devise procedures to make observations, produce or characterise a substance, test hypotheses, check data or explore phenomena</li> <li>Apply a knowledge of a range of techniques, instruments, apparatus, and materials to select those appropriate to the experiment</li> <li>Carry out experiments appropriately having due regard for the correct manipulation of apparatus, the accuracy of measurements and health and safety considerations</li> <li>Make and record observations and measurements using a range of apparatus and methods</li> </ul>	<ul> <li>Targeted questioning</li> <li>Past papers</li> </ul>	<ul> <li>Worksheets</li> <li>Flipped learning activities</li> <li>Past exam questions</li> <li>Research</li> <li>Practical write-ups</li> <li>Isaac Physics</li> </ul>	<ul> <li>Grateful for waves enabling us to be able to communicate</li> <li>Discerning when analysing data presented to us and joyful at the possibilities of science</li> <li>Leading others in pursuit of justice when planning and carrying out a practical</li> <li>Service and sacrifice when we recognise the scientific work that has been done before us</li> <li>Loving and compassionate when we consider how scientific advancements can be used to help others</li> <li>Dignity of God's people</li> </ul>	KS1/2 • Energy • Forces KS3 • Energy • Forces KS4 • Energy • Forces

Sequencing	What knowledge	What skills will students develop?	Assessment	Homework	Personal	Curriculum links
of topics	will students	(Including literacy & numeracy)	opportunities	opportunities	development	
	develop? (Including				(Ursuline Values,	
	key terminology)				Catholic Social	
	,				Teaching, Cultural	
					Capital. Cross-	
					curricular, Careers)	
		<ul> <li>Evaluate methods and suggest</li> </ul>			$\circ$ Community and	
		nossible improvements and further			narticination	
		investigations			• Care for creation	
		<ul> <li>Presenting observations and other</li> </ul>			• Dignity in work	
		data using appropriate methods			<ul> <li>Peace and</li> </ul>	
		<ul> <li>Interpreting observations and other</li> </ul>			reconciliation	
		data (presented in verbal,			• Solidarity	
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		patterns and trends, making			• Moral	
		inferences and drawing conclusions			• Cultural	
		<ul> <li>Presenting reasoned explanations</li> </ul>			○ Art	
		including relating data to hypotheses			<ul> <li>Geography</li> </ul>	
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		terms of accuracy, precision,				
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		mega kilo centi milli micro and				
		nano)				
		$\circ$ Interconvert units				
		<ul> <li>Interconvert units</li> </ul>				

Sequencing of topics	What knowledge will students develop? (Including key terminology)	What skills will students develop? (Including literacy & numeracy)	Assessment opportunities	Homework opportunities	Personal development (Ursuline Values, Catholic Social Teaching, Cultural Capital, Cross- curricular, Careers)	Curriculum links
		<ul> <li>Use an appropriate number of significant figures in calculation</li> </ul>				