Curriculum Overview – Physics						
	Year 7	Year 8	Year 9	Year 10	Year 11	
Energy	Students study the concept of energy transfers in society and at home as well as the use of generating electricity by using energy resources. Students learn how to use a mathematical formula in order to calculate unknown quantity. They learn how to evaluate energy resources to determining which one would be best to use based on different factors. Links with content also studied at GCSE.		The first unit of GCSE content is the energy topic. Students learn energy is transferred between different objects and link this with the idea of work done. Students study in more detail how energy is transferred or stored as different types of energy and improve their understanding at identify the different between them. Students continue to develop their knowledge of how electricity is generated by using energy resources. Furthermore, learn to evaluate the advantages and disadvantages of each type for electricity generation. Student look at thermal energy transfers and how certain objects will affect the rate of thermal energy transfer. They will obtain declarative and procedural knowledge during lessons and practicals. This is specifically for the required practical for insulation.		Students learn to apply their understanding of energy transfers through calculations by learning to use the kinetic, gravitational potential, elastic potential and efficiency equations. Furthermore, by using simple assumptions, students can demonstrate the effect on an object via calculation. This is when energy is transferred between two different types.	
Electricity	Students study the basics of electricity circuits by learning how to construct an electrical circuit physically using electrical components from a circuit diagram. They study the basic concepts potential difference, current and resistance in both series and	CURRENT – DEVEOPING NEW YEAR 8 NEXT YEAR Students study the basic concepts of electricity of potential difference, current and resistance in both series and parallel circuits. They also learn about the cause of static	For current year 9 In year 9, Students develop their knowledge of electricity which is used to power devices in their home by using plugs, alternating and direct current,		For current year 10 and 11 In year 11, Students develop their knowledge of electricity which is used to power devices in their home by using plugs, alternating and direct current,	

parallel circuits. They learn how ring	electricity and the forces that	Student learn how electricity	Student learn how
mains are used by electricians in	act between changed objects.	is transported around the	electricity is transported
building and homes. They also learn	Links with content also	country via the National grid	around the country via the
about the cause of static electricity	studied at GCSE.	,	National grid
and the forces that act between		Students delve more deenly	
changed objects		into static electricity by	Students delve more deenly
changed objects.		discussing what causes a	into static electricity by
This links to contant also studied at		charged object to lose its	discussing what causes a
GCSE.		charge what dangers this can	charged object to lose its
		cause.	charge what dangers this
			can cause.
			For next years
			10 2024 - 2025
			In year 11 students delve
			deeper into the effects of
			potential difference, current
			and resistance in both series
			and parallel circuits.
			They will look at how to
			interpret mathematical
			calculations to ovalain
			changes in the outputs of
			changes in the outputs of
			different devices within
			circuits. They will also
			improve their knowledge at
			being able to set up their
			own circuits to take
			measurements using
			ammeters and voltmeters.
			They will obtain declarative
			and procedural knowledge
			during lessons and
			practicals. This is specifically
			for the required practicals
			for the resistance of a wire
			and IV characteristics for
			resistors filament lamos
			and diadas
			anu uloues.
			Students learn about a
			greater variety of electrical
			components and learn how
			to use their IV graphs to
			explain the function of the
			devices.

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					Furthermore, students learn how LDR's and thermistors are used in sensing circuits in the home and society.
Particle Medel of	The particle model is formally		This is the first topic studied	For the current year 10 only-	
Farticle Model of	introduced in a year 7 Chemistry		in year 9		
Matter	tonic and students learn how to		, ca. c	Students develop their	
	use it to explain the properties of		Students develop their	knowledge on the structure	
	the different states of matter		knowledge on structure and	and density of different	
	the different states of matter.		donsity of different states of	states of matter. They will	
	Students use the particle model to		matter They will obtain	obtain doclarative and	
	ovalain diffusion		doclarative and procedural	procedural knowledge	
			knowledge during lessons and	during lossons and	
	Students are introduced to the link		practicals. This is specifically	practicals. This is specifically	
	between changes of state and		for the required practicals for	for the required practicals	
	operation and as part of this learning		donsity and specific heat	for donsity and specific heat	
	to explain the shape of heating (or		canacity	capacity	
	cooling) curves		capacity.	capacity.	
	cooming) curves		Students develop their	Students develop their	
	Students learn about solubility and		knowledge that materials	knowledge that materials	
	in particular the link between		change temperature and	change temperature and	
	solubility and temperature for solid		state differently. This is due	state differently. This is due	
	solubility and temperature for solid.		differences in their specific	differences in their specific	
	Students learn what a mixture and a		heat canacities and specific	heat canacities and specific	
	nure substance are in terms of		latent heats respectively	latent heats respectively	
	narticles		intent neuts respectively.	atent fields respectively.	
	participat		Students learn about the	Students learn about the	
	During this students will interpret		motion of particles in gases	motion of particles in gases	
	simple graphs and describe trends		and use the gas laws to	and use the gas laws to	
	shown by graphs.		explain how gases changes	explain how gases changes	
			pressure, volume or	pressure, volume or	
	The properties of metals and non-		temperature.	temperature.	
	metals and the usefulness of				
	classifying materials is studied.		Physicists will delve into this	Physicists will delve into this	
	, ,		further by calculating the	further by calculating the	
			changes in gas pressure and	changes in gas pressure and	
			volume.	volume.	
Atomic structure			Students will expand on their		
and radioactivity			knowledge of the atom from		
and radioactivity			knowledge learnt in KS3.		
			Students will learn about the		
			different types of nuclear		
			radiation and their uses. They		
			will develop their knowledge		
			on how radioactive decay can		

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			be used to describe the		
			activity of a radioactive		
			substance over time.		
			Physicists will learn about		
			background radiation as well		
			as the link between half life		
			and risk		
			Dhuaisista usillalaa aaabu thain		
			Physicists will also apply their		
			knowledge of nuclear		
			radiation to understand its		
			role in medicine. Finally, they		
			will learn about the		
			differences between fission		
			and fusion.		
Forces and their	Students study contact and non-				In year 11, students delve
Torces and then	contact forces and how they are				deeper into the study of
interactions	represented with free body				contact and non-contact
	diagrams. They will how to use				forces. They develop their
	these diagrams to explain the				knowledge further on how
	everall resultant force which is				they are represented with
	overall resultant force which is				they are represented with
	acting on an object.				free body diagrams.
	Students learn the difference				They expand on their
	between mass and weight.				knowledge on how to
	Additionally, they learn how to				calculate or resolve the
	explain how an object's weight				resultant force acting on an
	would change on different planets.				object from or into its
					individual components
					respectively.
	Links with content also studied at				. ,
	GCSE				Students develop their
	0001				knowledge on different
					types of material and how
					they record to forces
					heirs applied to them
					being applied to them.
					Additionally, they look at
					calculating the effect of a
					force on different objects.
					They will obtain declarative
					and procedural knowledge
					during lessons and
					practicals. This is specifically
					for the required practical on
					HOOKE'S LAW.

				Physicists will also learn about the effects of moments, levers and gears on objects. Finally, they will develop their knowledge on describing and calculating pressure in fluids and gases. Furthermore, they will learn how to ovaloin changes in
				now to explain changes in
				atmospheric pressure
Forces and	Students study the concept of			In year 11, students begin
Motion	speed.			delve deeper into the
Wietion				motion of objects by
	Students begin with how to			identifying motion of
	calculate speed how motion of			objects from distance time
	objects can be demonstrated using			and velocity time graphs.
	distance time graphs and can be			
	explained in terms of forces.			Students will develop their
				knowledge in explaining the
	Students learn how to explain the			motion of objects by
	motion of an object from a distance			applying Newton's three
	time graph and how changes in the			laws. They will also look into
	forces acting on an object will affect			explain the changes in
	its motion.			motion of falling objects
				and why they reach
				terminal velocity.
	This also links with content studied			Furthermore, students will
	at GCSE.			obtain declarative and
				procedural knowledge
				during lessons and
				practicals. This is specifically
				for the required practical on
				Newton's Second Law
				Practical
				Physicists Will also look into
				momentum and how it
				changes in a moving object
				during a collision.
Waves		CURRENT – DEVEOPING NEW		in year 11, students delve
		YEAK & NEXT YEAK		deeper into their knowledge
				of waves by learning key
		in the light and sound topic,		wave properties to explain
		students learn about how		the difference between

	both light and sound waves		waves. They will obtain
	travel. They develop their		declarative and procedural
	knowledge on now light		knowledge during lessons
	travels through objects and		and practicals. This is
	now it interacts with them by		specifically for the required
	the process of reflection and		practicals waves in liquids
	refraction. They will use this		and solids.
	to understand why objects		
	appear certain colours in		Students develop their
	different types of light.		knowledge on the types of
			electromagnetic radiation
	Students learn how sound		and how their properties
	travels as waves and how it is		are used to describe how
	transferred at different		they are generated and
	speeds through different		their dangers.
	materials.		
			Physicists will expand
	Finally, they learn how the		further on their knowledge
	speed of sound can be		of refraction by learning
	calculated.		how light rays travels
			through concave and
	This also links with content		convex lenses to form
	studied at GCSE.		images with different sizes
			and orientations.
			Physicists will delve deeper
			into the applications of
			sound waves for how it is
			used for sonar and
			ultrasound to detect the
			distances between objects.
Magnetism and	CURRENT – DEVEOPING NEW		Students delve deeper into
electromagnetism	YEAR 8 NEXT YEAR		magnetism by learning
creetromagnetion			about induced and
	Students study the link		permanent magnetic, how
	between electricity and		any magnet will have
	magnetism and how		magnetic field around it.
	magnetism can be induced a		i ney will obtain declarative
	current through a conductor.		and procedural knowledge
			during lessons and
	Student learn how to explain		practicals. This will be a
	different strategies which can		practical on showing the
	be used to change the		magnetic fields around a
	strength of an electromagnet.		bar magnet using iron
			fillings and compasses.
	Links with content also		
	studied at GCSE.		

		Students will develop their
		knowledge how to explain
		the operation of different
		alectromagnetic devices
		electromagnetic devices.
		Furthermore, students learn
		about Fleming's left hand
		rule and how it can be used
		to explain the motion of a
		coil in an electric motor.
		Physicists will apply their
		understanding of Fleming's
		left hand rule to explain the
		generator effect as well as
		the operation of loud
		speakers and microphones.
		They also develop
		knowledge on how
		transformers can affect the
		properties of electricity via
		explanation and calculation.