Year 9 Physics Curriculum – 2022-23

	Autumn Term		Spring Term		Summer Term	
	1	2	1	2	1	2
	Energy and Energy Resources		Practical Skills and Electricity			
National Curriculum Knowledge & Understanding	Energy and Energy Resources In this unit, pupils will continue to de elop their understanding o! energy and energy trans!er "egun in years # and $% &his includes de elopment o! an energy stores model and the processes, such as !orces and electrical currents, through which energy can "e trans!erred% Pupils will learn how to analyse energy changes in gra itational stores, through li!ting and !alling, and elastic potential stores during stretching using the rele ant mathematical relationships% &he conser ation o! energy through changes in the gra itational, kinetic, and elastic stores will also "e discussed% Pupils will consider the dissipation o! energy during trans!ers such as those caused "y electrical heating, leading to the idea o! e ' ciency during di(erent energy changes and its calculation% &he concept o! e ' ciency will then "e applied to the selection o! electrical de ices% &hey will apply this to the use o! !ossil !uels in a power station, and in contrast with why we should use more renewa"le resources o!	Practical Skills) orking scienti*cally skills are an important and integral aspect in physics% Pupils need to%"e a"le to identi!y aria"les and carry out in estigations using their skills to o"tain alid results to in estigations% &his unit will continue in the de elopment o! the working scienti*cally aspect o! KS+ National Curriculum as maths and literacy skills%	Electricity Electricity is a !undamental part o! li!e which we take !or granted and it e,plains why e eryday appliances work% Its important pupils know the sa!ety aspects o! it and "asic methods o! wiring plugs and making circuits% Electricity is a !undamental part o! li!e which we take !or granted% In this topic pupils will "uild upon their knowledge o! electricity and energy trans!ers in estigating how electricity is distri"uted sa!ely in the home% &hey will ac-uire practical skills in terms o! wiring a plug% Pupils will also "uild circuits with resisti e de ices in estigating how e,ternal !actors a(ect their resistance% &hey will also in estigate the relationship "etween oltage will aE0 will@s impoli ii$	

	energy to increase their awareness o! the e(ects o! using energy resources en ironment% &he students will compare all the energy resources in terms o! local en ironmental impacts such as pollution and glo"al en ironment impacts such as acid rain and contri"ution to glo"al warming% &his module is crucial !or students to de elop an understanding o! the climate change crisis and how to de elop e ' cient systems !or generating electricity !or the !uture "y incorporating more renewa"le resources%0 &his will ena"le pupils to understand energy in e eryday li!e%00		measurements to ena"le them to apply mathematical e-uations to draw conclusions% &hey will continue their studies on resistance and in estigate non1ohmic conductors%		
2ssessment	End o! unit assessment	Practical assessment o! skills	End o! unit assessment	Practical assessment o! skills	End o! year assessment
) hy this3) hy now3	Pupils ha e already studied energy and energy trans!er in year # and then "uilding on this knowledge in year $% &his unit !urther applies their e,isting knowledge to e,plain the properties o! su"stances undergoing changes o! state in relation to the energy o! their particles% It is also important that this unit is taught a!ter energy costs and energy trans!er so that pupils can appreciate the laws o! conser ation o! energy and includes de elopment o! an energy stores	&his unit will "uild on skills !rom KS4 and !rom years # and $ where they ha e already had many opportunities !or de eloping working scienti*cally and practical working skills% &his will also aid in the	Pupils should ha e a secure knowledge o! circuits and "asic circuit "uilding skills which were studied in year # and prior to this KS4% &his is an ideal point to re isit aspects o! the KS+ curriculum, while del ing deeper	) orking scienti*cally skills are an important and integral aspect in physics, which is why pupils will continue in their learning% Pupils need to "e a"le to continually identi!y aria"les and carry out in estigations	In this section pupils will re isit ital aspects o! each unit and mathematical skills studied in preparation !or their end o! year assessment% It is important pupils re isit scienti*c concepts in order to aid understanding

	model and the processes, such as !orces and electrical currents, through which energy can "e trans!erred% Pupils ha e already "een introduced to work in year $, now they will learn how to measure the work done "y a !orce acting o er a distance and how this concept can "e used to analyse energy changes in gra itational stores, through li!ting and !alling, and elastic potential stores during stretching using the rele ant mathematical relationships% &he conser ation o! energy through changes in the gra itational, kinetic, and elastic stores will also "e discussed% Pupils will then "e a"le to consider the dissipation o! energy during trans!ers such as those caused "y !riction or electrical heating, leading to the idea o! e ' ciency during di(erent energy changes and its calculation% &he concept o! e ' ciency will then "e applied to the selection o! electrical de ices% In year $ pupils ha e "een introduced to the idea that there are renewa"le and non1renewa"le energy resources% Pupils will now e,amine renewa"le energy stores in more detail% &his unit will then incorporate aspects o! "oth energy, work and energy trans!ers to "e a"le to e,plain the laws o! conser ation o! energy and to e,amine energy e ' ciency while also using de eloping in estigati e	enhancement o! social skills such as working in groups to carry out in estigati e processes re-uired% &his is especially important post1 co id where opportunities !or practical group work may ha e "een less !re-uent%) orking scienti*cally skills are an imperati e aspect o! !uture learning as they are tested on throughout KS5 in the completion o! re-uired practical6s !or "iology, chemistry and physics and in KS7 pupils practical skills will "ecome more re*ned% &hese opportunities are essential !or "uilding skills	within the topic% Pupils will also ha e the practical skills such as the a"ility to "e a"le to read meters correctly which are needed to success!ully access the practical elements o! this unit% Pupils will also "e reliant on understanding o! electrical conductors and insulators and apply this to electrical sa!ety% 8ood practical planning and in estigati e skills are important to de elop "e!ore progression to KS5 and pupils will ha e already e,perienced some o! this while completing practical work% &hey will "uild on their understanding !rom this unit to	using their skills to o"tain alid results to in estigations% &his unit will continue in the de elopment o! the working scienti*cally aspect o! KS+ National Curriculum as maths and literacy skills% &his unit will "uild on skills !rom KS4 and !rom years # and $ where they ha e already had some opportunities !or de eloping working scienti*cally and practical working skills% &his will also aid in the enhancement o! social skills such as working in groups to carry out in estigati e processes re-uired% &his is especially important post1 co id where	and retention o! scienti*c concepts to ena"le !orm !oundations to "e made%

	planning and in estigati e skills are important to de elop "e!ore progress in to KS5%		a%c and d%c in more details and how electric shocks can "e		