Key Stage 4 Curriculum

Combined Science Physics

In Year 10 Students will study:

THE WINSFORD ACADEMY

	Winter Term		Spring Term		Summer Term	
	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Content	**Energy** Students will study the different forms of energy and how they are transferred from one form to the other as either energy transfers or stores. Students calculate efficiency, linking it to the efficiency of different devices. They calculate work done, power, kinetic energy, elastic energy and gravitational potential energy in a selection of different and varied situation.		**Electricity** Students will study the different components that are used in common circuits before moving on to looking at the similarities and differences between series and parallel circuits. Students investigate how the resistance in a wire can be varied, applying Ohm/s law. Students draw and describe current voltage graphs, linking them to a variety of component.	**Particle Model of Matter** In this unit learners recap the particle model of matter but use it to describe the changes that occur as materials change state. Students study specific heat capacity and latent heat. Investigating it experimentally	**Atomic Structure** This unit looks at the structure of an atom and how isotopes give rise to alpha, beta and gamma radiation. Students study the properties of alpha, beta and gamma radiation and how these forms of radiation can be used in a variety of different applications. The harm caused by radiation is assessed as well as how to calculate the half life of different radioactive materials and how this can impact an isotopes uses.	
Homework	Past exam questions set through Teams Assignments. Units of revision and questions through Seneca Learning		Past exam questions set through Teams Assignments. Units of revision and questions through Seneca Learning	Past exam questions set through Teams Assignments. Units of revision and questions through Seneca Learning	Past exam questions set through Teams Assignments. Units of revision and questions through Seneca Learning	

Wider Curriculum Offer			During this Half term students may be invited to attend The Big Bang Live Event	
Assessment	Students will be assessed at the end of the unit through past exam questions that form part of an end of topic test	Students will be assessed at the end of the unit through past exam questions that form part of an end of topic test	Students will be assessed at the end of the unit through past exam questions that form part of an end of topic test	Students will be assessed at the end of the unit through past exam questions that form part of an end of topic test

	Winter Term		Spring Term		Summer Term	
	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Content	**Forces** Students study Newton's 3 laws and how they are applied to a variety of situations. Students study terminal velocity and momentum, calculating how momentum behaves in collisions and how the principles of momentum are applied in the creation of safety devices such as seat belts, air bags and crash helmets. The forces generated by gasses are investigated and how these forces can be varied.	**Waves** The properties and behaviour of light and sound waves are studied. Students use a ripple tank to model the behaviour of light as it reflects and diffracts. Students measure the speed of a wave in water and in air as a required practical. Students use the ray boxes to construct ray diagrams to show what happens as light refracts and reflects from mirrors and through Perspex blocks.	**Electromagnetism** Students study the electromagnetic spectrum. They study the different parts of the spectrum, its advantages and uses and its hazards. Students go onto study the motor and the motor effect.	Preparation and exam revision	GCSE Exams	
Homework	Past exam questions set through Teams Assignments. Units of revision and questions through Seneca Learning	Past exam questions set through Teams Assignments. Units of revision and questions through Seneca Learning	Past exam questions set through Teams Assignments. Units of revision and questions through Seneca Learning			

In Year 11 Students will study:

Wider Curriculum Offer	Revision classes after school	Revision classes after school	Revision classes after school Programme of Saturday Revision		
How you will be assessed	Students will be assessed at the end of the unit through past exam questions that form part of an end of topic test	Students will be assessed at the end of the unit through past exam questions that form part of an end of topic test	Students will be assessed at the end of the unit through past exam questions that form part of an end of topic test		Students will be assessed at the end of the unit through past exam questions that form part of an end of topic test