Northallerton School & Sixth Form College
Being the best we can be

Year 10 Physics (AQA Combined Science)

Having started the GCSE curriculum in Year 9, students will now continue with the course beginning with the topic 'Atomic Structure'. This year students will build on the key principles covered in Year 9 'Particle Model of Matter' and 'Energy' and link their fundamental work on energy to electrical circuits, nuclear power and sound and light. There are five required practicals which must be completed in Year 10 all of which are examinable and so it is important that students complete these and understand the methods used.

Methods of deepening and securing knowledge:	
Interleaving	Starter tasks are designed to check knowledge from not only the previous lesson but also lessons earlier in the topic and sometimes even other topics within physics which they will have covered previously.
Checkpoints/ mini plenaries	These are used within lessons to check understanding and address any misconceptions before moving on.
Independent Study	Past exam questions are set to assess subject knowledge and the ability to apply it in exam questions. Educake questions are used as a means of low-stakes testing to consolidate learning and check understanding.
Assessment for Progress	Each of the topics will have an 'Even Better If' (EBI) assessment where students are provided with bespoke tasks designed to help them reach the next level in their learning.

	Autumn term 1	Autumn term 2	Spring term 1
Topic(s)	**Atomic Structure** ● History of the atom. ● Radioactivity and stability. ● Half-Life. ● Alpha, beta and gamma radiation. ● Uses of radioisotopes.	**Electricity** ● Electric circuits. ● Current, potential difference and resistance. ● Series and parallel circuits. ● Filament lamps. ● AC and DC electricity. **Required Practicals:** ● **Resistance of a wire** - use circuit diagrams to set up and check appropriate circuits to investigate the factors affecting the resistance of electrical circuits. ● **Resistance of different circuit elements -** use circuit diagrams to construct appropriate circuits to investigate the I–V characteristics of a variety of circuit elements.	**Electricity** ● Mains electricity. ● Plugs. wires and fuses. ● Electrical power. ● The National Grid. **Waves** ● Types of wave. ● Wave properties. ● The electromagnetic spectrum.
Assessment	End of unit test followed by EBI tasks.	Interim assessment and EBI tasks.	End of unit test followed by EBI tasks.
CEIAG *(Careers that are linked to that topic)*	Nuclear scientist. Research scientist. Radiographer. Radiologist.	Electrician. Electrical engineer.	National Grid engineer. Optician.

	Spring term 2	Summer term 1	Summer term 2
Topic(s)	**Waves** • Absorption and emission of radiation. • Dangers of ionising radiation. • Refraction. **Required Practicals:** • **Measuring Waves -** make observations to identify the suitability of apparatus to measure the frequency, wavelength and speed of waves in a solid, liquid and gas and take appropriate measurements. • **Refraction** - investigate the refraction of light by different surfaces**.**	**Magnetism and Electromagnetism** • Magnets and magnetic fields. • Electromagnetism. • The Motor Effect. **Paper 1 Revision**	**Magnetism and Electromagnetism** • Fleming's Left Hand Rule. • Electric motors.
Assessment	End of unit test followed by EBI tasks.	**First pre-public examinations** End of unit test followed by EBI tasks.	End of unit test followed by EBI tasks.
CEIAG *(Careers that are linked to that topic)*	Opticians.	National Grid engineer.	Motor engineer. Electrician. Electromechanic.

Independent Study
Educake is used to set timely and relevant revision questions throughout the topic. There will be around 20 questions set and the difficulty will be tailored to the ability of the group. Students can immediately see their scores and also identify which areas are their strongest and weakest within the questions given. Senecalearning.com also provides an incredible revision resource to allow students to consolidate their learning at their own pace. Past exam questions will also be used to practise applying knowledge to different contexts.