



The curriculum for this stage of students' education has been designed to build upon their prior knowledge from KS3 Physics. This course provides a worthwhile background for all students, whether or not they intend to go on to study Physics beyond GCSE. The course enables students to acquire a body of scientific knowledge and develop an understanding of the ideas and applications of Physics e.g. Circuits and Domestic Electricity, Matter and Atomic Structure. This is set in the context of knowing and understanding a body of scientific facts. Students acquire an understanding and experience of the methods used in science and of the application of experimental techniques in everyday life.

HALF TERM 1: Waves and Circuits

STUDENTS MUST KNOW:

- Waves-Sound: Understand how and why we hear sound in longitudinal waves, explain amplitude, wavelength and frequency.

STUDENTS MUST KNOW:

- Electrical Charges and Fields. To understand how two charged particles interact with one another (T).
- Current and Charge. How to read a circuit diagram and calculate the current in a circuit.
- Potential Difference and Resistance. To understand the relationship between current and voltage.
- Resistance in a Circuit Investigation. To understand how resistance changes with length of a wire.
- Component Characteristics. To understand why resistance doesn't stay constant in all components in a circuit.

REQUIRED PRACTICAL 3:

Use circuit diagrams to set up and check appropriate circuits to investigate the factors affecting the resistance of electrical circuits.

REQUIRED PRACTICAL 4: use circuit diagrams to construct appropriate circuits to investigate the I-V characteristics of a variety of circuit elements.

HOW THIS WILL BE ASSESSED:

Students will be assessed by a progress test half way through the topic as well as an end of topic assessment.

HALF TERM 2: Circuits Part Cont. and Domestic Electricity

STUDENTS MUST KNOW:

- Component Characteristics Investigation. To measure and plot the Current and Potential Difference characteristics of components in a circuit.
- Series Circuits. To understand how resistors combine and current flows with in a series circuit.
- Parallel Circuits. To understand how resistors combine and current flows with in a parallel circuit.
- Alternating Current. To understand alternating current and how it is utilised in providing electricity to homes and offices.
- Cables and Plugs. To understand the key features of the UK 3-pin plug.

HOW THIS WILL BE ASSESSED:

Students will be assessed by a progress test half way through the topic as well as an end of topic assessment.

HALF TERM 3: Domestic Electricity Cont.

STUDENTS MUST KNOW:

- Electrical Power and Potential Difference. To establish an appliances power and select the correct fuse.
- Electrical Currents and Energy Transfer. To understand how a power supply provides energy to a current and a resistor transfers energy to the surroundings.
- Appliances and Efficiency. To understand how a power supply provides energy to a current and a resistor transfers energy to the surroundings.
- The National Grid and Transformers. To understand how the National Grid transports electricity.

HOW THIS WILL BE ASSESSED:

Students will be assessed by a progress test half way through the topic as well as an end of topic assessment.



<p>HALF TERM 4: Matter</p> <p>STUDENTS MUST KNOW:</p> <ul style="list-style-type: none"> • Density. To understand the relationship between mass and volume in calculating density. • Density Investigation. To calculate the density of regular objects, irregular objects and Liquids. • States of Matter. To understand the property differences as a substance changes state. <p>HOW THIS WILL BE ASSESSED: Students will be assessed by a progress test half way through the topic as well as an end of topic assessment.</p>	<p>HALF TERM 5: Matter Continued</p> <p>STUDENTS MUST KNOW:</p> <p>HOW THIS WILL BE ASSESSED:</p> <ul style="list-style-type: none"> • Changes of State. To understand what happens to temperature as a material melts and boils. • Internal Energy. To explain how the kinematic model applies to the state of matter. • Specific Latent Heat. To understand how to calculate latent heat of fusion and vaporisation. <p>HOW THIS WILL BE ASSESSED: Students will be assessed by a progress test half way through the topic as well as an end of topic assessment.</p>	<p>HALF TERM 6: Matter Continued</p> <p>STUDENTS MUST KNOW:</p> <ul style="list-style-type: none"> • Specific Heat Capacity. To understand for different material the amount of energy required to raise 1 kg of the material by 1 °C. • Specific Heat Capacity Required Practical. To determine the specific heat capacity of one or more materials • Gas Pressure and Temperature. To understand how pressure in a container increases as the temperature of the gas in the container increases. • Gas Pressure and Volume. To understand how pressure in a container increases as the volume of the gas in the container decreases (T). <p>HOW THIS WILL BE ASSESSED: Students will be assessed by a progress test half way through the topic as well as an end of topic assessment.</p>
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Embedding this knowledge can be supported at home by reviewing class notes, guided learning wider reading, exam practice questions, independent research and study, completing set independent study tasks, watching in scientific documentaries and understanding current issues in the scientific world. In addition, use the AQA website, BBC Bitesize and GCSEPOD in conjunction with suitable revision guides.