



Attainment Band	<p align="center">Electricity & Electromagnets Knowledge and Understanding</p>
<p align="center">Yellow/ Yellow +</p>	<ul style="list-style-type: none"> ● Explain how electrical conductors work, using models; explain the strengths and weaknesses of different models and analogies that describe how current works ● Compare the strengths and weaknesses of different models ● Derive a mathematical relationship between voltage and current, and make predictions from it ● Use models and analogies to explain how different factors affect resistance ● Compare the strengths and weaknesses of different models ● Explain why components behave differently in series and parallel circuits ● Make predictions about current and voltage in different circuit arrangements; explain how the domestic ring main works ● Explain the advantages of using either series or parallel circuits ● Describe early ideas about magnetism ● Explain how historical ideas about magnetism were developed ● Explain how scientific methods can be used to develop ideas further ● Use the domain theory to explain how materials become magnetised and demagnetised; evaluate experimental designs and make improvements ● Draw and explain conclusions about magnets using the domain theory; use data to evaluate different methods of making magnets and testing magnetic strength ● Evaluate the concept of magnetic field and force lines ● Explain evidence for how the Earth's magnetic field works ● Analyse data and draw conclusions; use models and analogies to explain the factors affecting the strengths of electromagnets ● Explain the advantages and disadvantages of using electromagnets
<p align="center">Blue</p>	<ul style="list-style-type: none"> ● Describe what current is, using models and analogies ● Relate current and voltage to different models ● Describe the relationship between voltage, current and resistance; present results using appropriate graphs ● Investigate factors affecting resistance ● Relate the current, voltage and resistance to the rope model ● Draw and interpret circuit diagrams for series and parallel circuits; predict the brightness of bulbs in these circuits ● Use models to explain what is happening to the current and voltage in series and parallel circuits; calculate the current and the voltage in series and parallel circuits ● Describe different uses of series and parallel circuits ● Explain how historical ideas about magnetism were developed ● Describe different methods of making permanent magnets; design an investigation to compare different methods of making magnets ● Interpret data using graphs; compare methods of making permanent magnets ● Explain the presence of a magnetic field and indicate how it varies with regard to field lines, direction and strength ● Describe the geodynamo theory ● Collect accurate, reliable evidence; describe the factors that affect the strength of electromagnets ● Compare and contrast the use of magnets and electromagnets in different applications



Green	<ul style="list-style-type: none">● Recognise and use symbols to represent components in a circuit; investigate electrical conductors and insulators.● Recognise the units of voltage; use different models to describe voltage.● Describe the term 'resistance' and recognise the units; collect reliable data from circuits.● Describe resistance and its effect in a circuit.● Use different models to describe voltage, current and resistance.● Recognise circuits as being series or parallel and identify the features of each.● Make measurements of current and voltage in series circuits and parallel circuits.● Identify if a circuit is arranged in series or parallel or both.● Describe early ideas about magnetism.● Describe the differences between permanent and temporary magnets; describe how to test the strength of a magnet.● Follow a procedure to collect reliable, accurate and valid data.● Record and display ideas about magnetic fields.● Describe some effects of the Earth's magnetic field.● Plan to investigate the strength of electromagnets; describe what an electromagnet is.● Describe different applications of magnets and electromagnets.
White	<ul style="list-style-type: none">● Some of the above elements have been achieved.