Electromagnetism

Achievement Standard: Science 1.2 Assessment: Internal Credits: 4

**Static Electricity**

* State that an object can have a positive, negative or neutral charge
* State that opposite charges attract, like charges repel
* Explain the difference between conductors and insulators
* Draw the distribution of charges on an object
* Describe what happens when an object is ‘earthed’
* Describe how a charged object discharges in air
* Describe how an object can be charged by friction
* Describe how an object can be charged by contact

**Current Electricity**

* Define voltage, current and resistance
* Draw circuit diagrams using the correct symbols
* Calculate voltage across a resistor using Ohm’s Law V = IR
* Explain the difference between series circuits and parallel circuits
* Calculate the total resistance of a series circuit
* Calculate the total resistance of a parallel circuit
* Calculate electrical power using P = VI
* Discuss electrical safety features

**Magnetism**

* Recall that magnetic field lines go from north to south
* Draw magnetic field lines around a bar magnet, current-carrying wire, and a solenoid
* Use the right-hand-grip rule to determine the direction the magnetic field around a current-carrying wire
* Explain how an electromagnet works
* Explain uses of electromagnets

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