



# AQA GCSE Combined Science: Trilogy

## Topic Checklists

### 6.7 Magnetism and Electromagnetism

#### 6.7.1 Permanent and Induced Magnetism, Magnetic Forces and Fields

Topic	Success Criteria	Progress		
Poles of a Magnet	I can describe where the magnetic forces around a magnet are the strongest.			
	I can describe the attraction and repulsion between unlike and like poles for permanent magnets.			
	I can state whether attraction and repulsion between two magnetic poles are contact or non-contact forces.			
	I can describe the difference between permanent and induced magnets.			
Magnetic Fields	I can name four magnetic materials.			
	I can explain what a magnetic field is.			
	I can describe the type of force between a magnet and a magnetic material.			
	I can explain what affects the strength of a magnetic field.			
	I can describe the direction of the magnetic field at any point.			
	I can describe the direction of a magnetic field line.			
	I can explain how a magnetic compass works.			
	I can describe how to plot the magnetic field pattern of a magnet using a compass.			
	I can draw the magnetic field pattern of a bar magnet showing how strength and direction change from one point to another.			
I can explain how the behaviour of a magnetic compass is related to evidence that the core of the Earth must be magnetic.				

**6.7.2 The Motor Effect**

Topic	Success Criteria	Progress		
Electromagnetism	I can describe how a magnetic field is produced around a wire.			
	I can describe what affects the strength of the magnetic field around a wire.			
	I can explain how shaping a wire into a solenoid affects the strength of the magnetic field produced around the wire.			
	I can give two properties of the magnetic field inside a solenoid.			
	I can describe how the magnetic effect of a current can be demonstrated.			
	I can draw the magnetic field pattern for a straight wire carrying a current and for a solenoid (showing the direction of the field).			
	I can interpret diagrams of electromagnetic devices in order to explain how they work.			
Fleming's Left-Hand Rule (HT Only)	I can explain what is meant by the motor effect.			
	I can show that Fleming's left-hand rule represents the relative orientation of the force, the current in the conductor and the magnetic field.			
	I can recall the factors that affect the size of the force on the conductor.			
	I can calculate the force for a conductor at right angles to a magnetic field that is carrying a current by applying the correct equation from the physics equation sheet.			
	I can rearrange the equation linking current, force, length and magnetic flux density to calculate the current, length or magnetic flux density.			
Electric Motors (HT Only)	I can explain how the force on a conductor in a magnetic field causes the rotation of a coil in an electric motor.			