

## GCSE Physics

### Unit 1 – Electricity, energy and waves

GCSE Physics Sub-topic	NEW The sciences (double award) Sub-topic	Points to note
1.1 Electric circuits	6.3 Electricity: exploring electrical circuits and their uses	There is some overlap with this topic. A number of specification statements are not covered e.g. diodes, investigating $I$ - $V$ characteristics, calculating resistance in parallel, power as $P = I^2R$ .
1.2 Generating electricity	3.2 Energy resources and efficiency: electricity for the future	There is considerable overlap with 3.2.5 – generation of electricity, there are differences particularly with the “be aware” statements. There is overlap with 3.2.3 – efficiency The new approach for teaching energy in 3.2.1 does not match with the legacy specification
	6.5 Electromagnetism – How is electromagnetism used?	6.5.5 – the efficient distribution of electricity 6.5.4 – transformers – the role of step-up and step-down transformers
1.3 Making use of energy	3.2 Energy resources and efficiency: electricity for the future	3.2.2 – using insulation to minimise energy transfer. The methods of heat transfer are not covered in this section.
1.4 Domestic electricity	3.2 Energy resources and efficiency: electricity for the future	3.2.4 – power and the cost of using electrical appliances. The functions of fuses, circuit breakers, the ring main and investigating energy transfers are not covered in this section.
	6.5 Electromagnetism – How is electromagnetism used?	6.5.2 – electromagnetic induction – there is reference here to the difference between a.c. and d.c.

1.5 Features of waves	3.4 Waves: What are waves?	There is considerable overlap with: 3.4.1 – longitudinal and transverse waves 3.4.2 – wave properties 3.4.3 – the electromagnetic spectrum Communication using satellites in geosynchronous/geostationary orbits is not covered in these sections.
	6.2 Waves: How do we use waves around us?	6.2.1 – reflection and refraction are covered in this section.
1.6 The total internal reflection of waves	6.2 Waves: How do we use waves around us?	6.2.1 – total internal reflection is covered in this section. 6.2.2 – using waves – parts of this section are relevant on remote imaging, CT scans and endoscopy
1.7 Seismic waves	N/A	N/A
1.8 Kinetic theory	N/A	N/A
1.9 Electromagnetism	6.5 Electromagnetism – How is electromagnetism used?	There is considerable overlap with: 6.5.1 – characteristics of magnetic fields 6.5.2 – electromagnetic induction 6.5.3 – motors 6.5.4 - transformers

## Unit 2 – Forces, space and radioactivity

GCSE Physics Sub-topic	NEW The sciences (double award) Sub-topic	Points to note
2.1 Distance, speed and acceleration	3.1 Motion: how do objects move?	There is considerable overlap with all of this topic
2.2 Newton's laws	3.3 Forces: How do forces interact with objects?	There is considerable overlap with all of this topic. Inertia is not covered in this section.
2.3 Work and energy	6.4 Energy – Transferring energy efficiently	There is considerable overlap with all of this topic. Springs, energy efficiency of vehicles and the analysis of safety features of cars is not covered in this section.
2.4 Further motion concepts	N/A	N/A
2.5 Stars and planets	3.5 Our Universe – the wonders of the universe	There is some overlap with the following topics: 3.5.1 – the origins of the solar system 3.5.2 – observing the Universe using waves 3.5.3 - the life cycle of stars
2.6 The Universe	6.6 The Universe: What is out there?	There is considerable overlap with all of this topic.
2.7 Types of radiation	6.1 Radioactivity: What is radioactivity and how do we use it?	There is considerable overlap with: 6.1.1 – the random nature of radioactive decay
2.8 Half-life	6.1 Radioactivity: What is radioactivity and how do we use it?	There is considerable overlap with: 6.1.2 – modelling radioactive decay 6.1.3 – decay curves and half-life and their use in carbon dating 6.1.4 – uses of radioactive materials
2.9 Nuclear decay and nuclear energy	N/A	N/A