

P1 Topic 5 Revision tracker

PHYSICS

Learning objectives I can:	I can do this very well	I can do this quite well	I need to do more work on this
5.1 Describe current as the rate of flow of charge and voltage is an electrical pressure giving a measure of the energy transferred			
5.5 Discuss the advantages and disadvantages of methods of large-scale electricity production using a variety of renewable resources			
HSW 13 Describe the social, economic and environmental effects of decisions about the uses of science and technology			
HSW 12 Describe the benefits, drawbacks and risks of using new scientific and technological developments			
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5.7 Investigate factors affecting the generation of electric current by induction			
5.6 Demonstrate an understanding of the factors that affect the size and direction of the induced current			
5.8 Explain how to produce an electric current by the relative movement of a magnet and a coil of wire a on a small scale			
b in the large-scale generation of electrical energy			
5.9 Recall that generators supply current which alternates in direction			
5.10 Explain the difference between direct and alternating current			
HSW 12 Describe the benefits, drawbacks and risks of using new scientific and technological developments			
5.11 Recall that a transformer can change the size of an alternating voltage			
H 5.12 Use the turns ratio equation for transformers to predict either the missing voltage or the missing number of turns			
5.13 Explain why electrical energy is transmitted at high voltages, as it improves the efficiency by reducing heat loss in transmission lines			
5.14 Explain where and why step-up and step-down transformers are used in the transmission of electricity in the National Grid			
5.15 Describe the hazards associated with electricity transmission			
HSW 12 Describe the benefits, drawbacks and risks of using new scientific and technological developments			

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<p>5.2 Define power as the energy transferred per second and measured in watts</p>			
<p>5.3 Use the equation: electrical power = current × potential difference (watt, W) (ampere, A) (volt, V) $P = I \times V$</p>			
<p>5.16 Recall that energy from the mains supply is measured in kilowatt-hours</p>			
<p>5.17 Use this equation: Cost = power × time × cost of 1 kilowatt-hour (p) (kilowatts, kW) (hour, h) (p/kW h)</p>			
<p>5.21 Use this equation: power = energy used / time taken (watt, W) (joule, J) (second, s) $P = E/T$</p>			
<p>HSW 11 Present information, develop an argument and draw a conclusion using scientific, technical and mathematical language, and ICT tools</p>			
<p>5.4 Investigate the power consumption of low-voltage electrical items</p>			
<p>5.18 Demonstrate an understanding of the advantages of the use of low energy appliances</p>			
<p>5.19 Use data to compare and contrast the advantages and disadvantages of energy saving devices</p>			
<p>5.20 Use data to calculate cost-efficiency and payback times</p>			
<p>HSW 12 Describe the benefits, drawbacks and risks of using new scientific and technological developments</p>			