

What is quality revision?

Good quality revision

- Creating a revision timetable and sticking to it.
 - Short chunks of revision – spend between 20-30 minutes revising and have a short break of about 5 minutes or so.
 - Doing past papers.
- Using a variety of revision strategies that work for you, e.g. Mind maps, getting someone to test you, teaching someone else.
- Keep revisiting what you have revised and testing yourself after you have revised a topic.
- Treat yourself after a good day of revision.

Bad quality revision

- Simply reading the textbook or your notes.
- Overdoing your revision and not taking enough breaks.
- Leaving it to the last minute and panicking before the exam.
- Having distractions around you, e.g. TV, phone, internet.

Energy		
Energy Stores and Shifts	Energy stores shift (transfer) energy when something in the system changes, such as changing the speed of a moving object or heating water. Can you describe simple shifts and how they can happen (the <u>process</u>)? Can you use bar graphs to show this? <i>You must use the energy stores listed in your notes when describing changes.</i>	
Kinetic Energy	How can you work out the kinetic energy of a moving object? <u>Learn and use</u> the equation! What is E_k ? What are all the units for the kinetic energy equation?	
Elastic Energy	How can you calculate the elastic energy of a moving object? Be able to <u>use</u> the equation! What is E_e ? What are all the units for the elastic energy equation?	
Gravitational Potential Energy	How can you work out the gravitational potential energy of a moving object? <u>Learn and use</u> the equation! What is E_p ? What are all the units for the gravitational potential energy equation?	
Grav < - > Kinetic	Do you understand how falling objects shift energy from E_p to E_k and how this speeds a falling object up? Can you rearrange the equations? A rising, slowing, object shifts E_k to E_p – can you work out how high?	
Work Done	Can you recall and use the Work Done equation? Units for work?	
Power	How do we define power and what are the relevant units? Can you <u>recall and use</u> the two versions of the power equation?	

Specific Heat Capacity (SHC)	You must be able to define what SHC is and what affects the amount of thermal energy absorbed or released by an object when its temperature is changed.	
	You must be able to <u>use</u> and rearrange the SHC equation.	
Heat Transfer	You must explain what Conduction, Convection and Infrared (IR) radiation are and how each transfers heat (thermal) energy in systems.	
	What is similar between Conduction and Convection? What is different?	
	What are the key properties of IR radiation? How do different surfaces and colours respond to IR?	
	What makes a good insulator? How might you improve household insulation? Can you work out payback time?	

Electricity		
Circuit Symbols	Can you both draw out and identify the standard circuit symbols, as we have drawn in our books?	
	Can you construct simple loop circuits using the correct symbols from a written description?	
	What are the symbols for ammeters and voltmeters; how must these devices be connected; and what do they measure?	
Current and Charge	What is electric charge?	
	How do electric charges interact (i.e. if both are same or different to each other?)	
	What is an electric current?	
	How are current, charge and time linked? (<i>hint: see equations!</i>).	
	What are the units for charge and current?	
Simple Loop	What is the rule for current in a single loop circuit?	
Ohm's Law	Can you describe what potential difference (voltage) and resistance are?	
	What are Ohmic and non-Ohmic components?	
	How do potential difference, current and resistance relate to each other in an Ohmic component and what are their units? (<i>hint – Ohm's Law, see equations</i>).	
	What is a short circuit and why is it dangerous?	
Investigating Ohm's Law	How would you experimentally find if a component follows Ohm's Law or not? (<i>Hint – think about the resistor practical we did</i>).	
	What sort of graph might you plot for the results of 1. above, and why is it useful?	
Components and I / V graphs	What is an I / V graph?	
	Top Grade – what does the I / V graph gradient show?	
	What are the characteristic I / V graphs for a resistor at constant temperature, filament bulb and diode?	
	What behaviour(s) do the graphs in 3. above show?	
	How does the resistance of a thermistor change with temperature?	
	How does the resistance of a LDR (light-dependent resistor) change with light intensity?	
Electric circuits	Why are electrical circuits represented by circuit diagrams? What symbols do we use for common components?	
	What is the difference between a battery and a cell?	
	How can we calculate the size of an electric current from charge (Q) and time (t)?	
Resistance	What is Resistance and what is its unit?	
	What is Ohm's law?	
Current-potential difference (I/V) graphs	What happens to the resistance of a bulb as its temperature increases?	
	How does current through a diode change with potential difference (voltage)?	
	What happens to the resistance of a thermistor as temperature increases; and an LDR as light level increases?	

Series circuits	What are the rules for current and potential difference in a series circuit?
	How can we find the total resistance of resistors in series?
	What can we say about the potential difference of several cells in series?
Parallel circuits	What are the rules for current and potential difference in a parallel circuit?
	How can we calculate current through a resistor in a parallel circuit?
	What happens to total resistance if we connect resistors in parallel?
AC / DC	What is meant by direct current DC and alternating current AC?
Electric Power and Energy	How are power and energy linked? What are their respective units?
	What are the versions of the power equations for electric circuits?
	How are energy, voltage and charge linked in a circuit?
Cables, plugs and Fuses	What is inside a mains cable and plug? How do plugs protect us?
	What colour are the live, neutral and earth wires?
	What does Earth do? What is special about 2-core (Earth-less) appliances?
	What do we use a fuse for? What fuse rating should be fitted to a device?
Static Electricity and Electric Fields	How can we give an object a static charge?
	What happens when different charges come near each other?
	What do electric field patterns look like around isolated charges?

Magnetism and Electromagnetism	
Poles of a Magnet	How do LIKE poles react when placed near each other?
	How do UNLIKE poles react when placed near each other?
	What are the differences between permanent and non-permanent magnets, and magnetic materials? How do magnetic materials act in a magnetic field?
Magnetic Fields	What is a magnetic field and what metals can it produce a force on?
	Where is the field strongest and weakest?
	How do we draw magnetic fields, showing direction and strength?
	How can you investigate a magnetic field using a small plotting compass?
Electromagnetism	What happens when we make a current flow through a conducting wire?
	How do we build an electromagnet? How can we make it stronger?
	Can you describe devices that use electromagnets, and how they work? <i>E.g. Scrap- yard magnets, circuit breakers, electric relays and electric bells.</i>
The Motor Effect	What is the Motor Effect? What energy shift does it achieve?
	What factors affect the size of the Motor effect?
	What are the variables and units for the equation $F=BIL$?
Fleming's Left Hand Rule	How do we use Fleming's LHR to link motion, magnetic field and current directions in the Motor effect?
Motors and Loudspeakers	How can we use electrical energy to make an electric motor rotate?
	How do we use the motor effect to make loudspeakers vibrate and produce sound?
Induced Potential (Generator Effect)	What is the Generator effect? What energy shift does it achieve?
	What factors affect the size and direction of the Generator effect current?
Uses of the Generator Effect	Can you explain how the alternator and dynamo work?
	What shape / type of current does each of the above produce?
Microphones	How do we use the generator effect to allow microphones to transform sound energy to electrical signals?
Transformers	How can we construct a transformer and how do they work?
	Can you use the equation linking primary / secondary voltage to the number of coil turns on each side? What are step-up and step-down transformers?
	How are voltage and current in primary / secondary coils linked?
	Why are transformers used in the National Grid?

Forces	
Newton's Laws and Resultant Forces	What is the Resultant Force?
	What is Newton's 1st Law?
	What is Newton's 2nd Law and the equation linking force, mass and acceleration?
Falling objects (Weight, Terminal Velocity)	What is the difference between mass and weight?
	What can we say about the motion of a falling object acted on only by gravity?
	What is terminal velocity?
	Can you describe fully how the forces on a falling object change with speed, surface area or streamlining?
Motion	What do Distance-Time (D-T) graphs show? What is the gradient of a D-T graph?
	What do Velocity-Time (V-T) graphs show? What is the gradient of a V-T graph? What is the area under a V-T graph?
Stopping Distances	What is the Stopping Distance defined as?
	What different factors affect Thinking Distance and Braking Distance?
Moments	What does the moment of a force measure?
	How do calculate the moment of a force?
	How can we increase the moment of a force?
Moments in balance	What can we say about the moments of the forces acting on an object that isn't turning?
	How can we use our knowledge of forces and moments to explain why objects at rest don't turn?
	How can we calculate the size of a force acting on an object that is balanced?
Momentum	How can we calculate momentum?
	What is the unit of momentum?
	What happens to the total momentum of two objects when they collide?
Explosions	Why does momentum have a direction as well as a size?
	When two objects push each other apart: Do they move away at different speeds? Why is their total momentum zero?
Impact force	How does the impact force depend on the impact time and momentum?
Hydraulics and Pressure	What do we mean by pressure?
	What can we say about the pressure in a fluid?
	How does a hydraulic system work?
	What does the force exerted by a hydraulic system depend on?

You must learn the correct equations for each section from the equation formula sheet you were given – ask for a fresh one if you need it.

Resources – your class notes, CGP (or other) revision guides, BBC Bitesize, Youtube (“AQA GCSE Physics” plus topic as key words). Check the AQA specification - <http://filestore.aqa.org.uk/resources/physics/specifications/AQA-8463-SP-2016.PDF>

We also have **Kerboodle** access, which has the AQA and OCR textbooks and revision resources available. I strongly recommend checking this out – sort out your Kerboodle login before Easter!