Physics Paper 1 (foundation) – Check list

Practice applying your knowledge after using the knowledge organiser to revise a unit or topic:

- Take each learning statement and prove you can do it by answering that statement on paper.
- For any statement you cannot answer, use BBC bitesize to make notes and try to re-learn it.
- If you are still stuck, use Cognito science video lessons or ask a friend to re-explain

	Learning statement	**Answers from memory**
Energy Types	Describe ways in which energy can be transferred within a system	
Energy Types	Describe ways to store energy	
Energy Types	Describe the law of conservation of energy	
Energy Types	Describe concepts of open and closed systems	
Energy Types	Describe ways to reduce unwanted energy transfers	
Energy Types	Link energy loss to insulation and thermal conductivity	
Energy Types	Define renewable and non-renewable energy resources	
Energy Types	Compare & contrast energy resources in terms of reliability, cost and political, environmental & social factors	
Work, power and efficiency	Define and calculate work done using E=Pt and E=fd	
Work, power and efficiency	Define and calculate power using P=VI and E = Pt	
Work, power and efficiency	Describe examples of applications of power in everyday life	
Work, power and efficiency	Use and rearrange both equations for calculating efficiency	
Elastic Objects & potential energy	Describe elastic and inelastic deformation	
Elastic Objects & potential energy	Explain the effect of forces on elastic objects	
Elastic Objects & potential energy	Describe Hooke's Law qualitatively and using the equation F = ke	
Elastic Objects & potential energy	Explain 'word done' when applied to stretching or compressing a spring	
Elastic Objects & potential energy	Explain the difference between a linear and a non-linear relationship	
Elastic Objects & potential energy	Interpret data from a force extension investigation	
Elastic Objects & potential energy	**RP Force and Extension:** Investigate the relationship between force and extension for spring (Hooke's Law)	
Elastic Objects & potential energy	Use the elastic potential energy equation ($Ee=1/2ke^2$)	
Elastic Objects & potential energy	Use and rearrange the equation for kinetic energy ($Ek=1/2mv^2$)	
Elastic Objects & potential energy	Use and rearrange the equation for gravitational potential energy (Eg=mgh)	
Nuclear Physics	Describe the structure and size of an atom	
Nuclear Physics	Calculate the number of protons, neutrons and electrons in an atom	
Nuclear Physics	Describe how electrons can change energy level	
Nuclear Physics	Describe isotopes	

Nuclear Physics	Describe what an ion is	
Nuclear Physics	Describe the development of the model of the atom (Plum-pudding, Rutherford, Neils Bohr and Chadwick).	
Radioactive decay and Radiation	Describe what radioactive decay is	
Radioactive decay and Radiation	Recall the definition and units for activity and count rate	
Radioactive decay and Radiation	Describe what makes up alpha, beta, gamma and neutron radiation	
Radioactive decay and Radiation	Describe the properties of each type of radiation	
Radioactive decay and Radiation	Use nuclear equations to represent radioactive decay	
Radioactive decay and Radiation	Define half-life	
Radioactive decay and Radiation	Complete half-life calculations from graphs or other data	
Radioactive decay and Radiation	Describe the impact and precautions for radioactive contamination	
Radioactive decay and Radiation	Analyse data about the effects of radiation on people	
Density	Use and rearrange $\rho = m/v$	
Density	Draw simple diagrams to model the difference between solids, liquids and gases	
Density	Link the arrangement of atoms and molecules to different densities of the states	
Density	**RP Density:** Determine the densities of regular and irregular solid objects and liquids	
Changes of state and latent heat	Describe how mass is conserved during changes of state	
Changes of state and latent heat	Explain why changes of state are physical changes	
Changes of state and latent heat	Define internal energy	
Changes of state and latent heat	Explain the effect of heating on the energy within a system and calculate energy change during a state change.	
Changes of state and latent heat	Describe 'latent heat' of a material including specific latent heat of fusion and specific latent heat of vaporisation	
Changes of state and latent heat	Explain and calculate 'specific latent heat' using the $E=mL$	
Changes of state and latent heat	Interpret heating and cooling graphs that include changes of state	
Specific Heat Capacity	Explain the differences between 'heat' and 'temperature'	
Specific Heat Capacity	Define and calculate specific heat capacity	
Specific Heat Capacity	Use and rearrange equations for calculating specific heat capacity	
Specific Heat Capacity	**RP Specific Heat Capacity:** Investigate the specific heat capacity of materials	
Specific Heat Capacity	Distinguish between specific heat capacity and specific latent heat	

Gas Pressure and Fluid Pressure	Describe the motion of particles in a gas and relate this to pressure, kinetic energy and temperature	
Gas Pressure and Fluid Pressure	Explain the relationship between temperature and pressure of a gas at constant volume	
Electricity Introduction	Identify the key circuit symbols.	
Electricity Introduction	Define current, charge and potential difference.	
Electricity Introduction	Use and rearrange equations for calculating current.	
Electricity Introduction	Predict the current at given points within a series and parallel circuit.	
Electricity Introduction	Predict the potential difference (voltage) at given points within a series and parallel circuit.	
Electricity Introduction	Describe the relationship between current, potential difference and resistance.	
Electricity Introduction	Use and rearrange equations for calculating current, potential difference and resistance.	
Electricity Introduction	Recall units for current, potential difference and resistance.	
Series and Parallel Circuits	Compare and contrast series and parallel circuits in terms of current and potential difference.	
Series and Parallel Circuits	Calculate resistance in series circuits and describe resistance in parallel circuits.	
Series and Parallel Circuits	**RP Resistance:** Use circuit diagrams to set up circuits to investigate the factors affecting resistance (length of a wire at constant temperature and combinations of resistors in series and parallel.)	
Ohmic/Non-ohmic and types of resistors	Describe the relationship between current and potential difference in ohmic conductors.	
Ohmic/Non-ohmic and types of resistors	Explain how resistances change in thermistors and LDRs.	
Ohmic/Non-ohmic and types of resistors	List the applications of thermistors and LDRs.	
Ohmic/Non-ohmic and types of resistors	Interpret graphs to determine whether relationships are linear or non-linear.	
Ohmic/Non-ohmic and types of resistors	**RP I-V Characteristics:** Investigate V-I characteristics using circuits.	
Mains electricity	Describe the properties of mains electricity in the UK (A.C., Frequency and Voltage)	
Mains electricity	Explain the difference between direct and alternating potential difference	
Mains electricity	Describe the three core cables and the wires that they are made up of and the dangers of these	
Energy and Power of Electricity	Use and rearrange the P=IV equation (electrical power)	
Energy and Power of Electricity	Use and rearrange the $P=I^2R$ equation (electrical power)	
Energy and Power of Electricity	Describe energy transfers in electrical appliances	
Energy and Power of Electricity	Use and rearrange E=Pt	

Energy and Power of Electricity	Use and rearrange E=QV	
Energy and Power of Electricity	Explain how the power of a circuit is related to potential difference, current and energy	
The National Grid	Describe the components of the national grid	
The National Grid	Explain the role of step up and step down transformers in the national grid and use this to explain why it is an efficient system for transferring energy	