Physics Paper 1 Checklist- Trilogy

Key Point	1	2
Energy		
Name the different types of energy 'store' and describe how energy is transferred between them		
Identify where energy is wasted and describe where this goes		
Calculate the efficiency of devices		
Use Sankey diagrams to represent energy transfers or calculate efficiency		
Define and calculate kinetic energy		
Define and calculate gravitational potential energy		
Use values for GPE to calculate maximum theoretical velocity of a raised object		
Explain why theoretical velocity will not normally be reached		
Calculate the elastic potential energy in a stretched or squashed object		
Use and manipulate the specific heat capacity equation to calculate energy/mass/temperature change/specific heat capacity given the others		
Define specific heat capacity		
Calculate power using P=E/t or P=Work done/t		
Describe the relationship between watts and joules		
Define a 'closed system' and explain what happens to total energy when energy transfers happen in a closed system		
Describe ways to reduce unwanted energy transfers		
Describe factors that affect the thermal conductivity of a building		
Describe the use, reliability and environmental impacts of renewable and non-renewable energy resources		

Electricity		
Describe what is meant by an electric current and calculate it using Q=It		
Describe what is meant by resistance and calculate values for it using Ohm's Law		
Calculate current, voltage and resistance in series and parallel circuits		
Recognise, describe and explain the shape of current-voltage graphs for a filament bulb, ohmic resistor and a diode		
Use and recognise the symbols for all the circuit components covered		

Recognise, describe and explain the shape of resistance- light level graph for a light dependent resistor		
Describe and explain uses of LDRs – e.g switching on lights when it gets dark		
Recognise, describe and explain the shape of resistance- temperature graph for a thermistor		
Label the features and describe the safe operation of a 3 pin plug		
Explain the difference between direct and alternating pd		
Calculate electrical power and energy transferred for given appliances		
Describe the features of the National Grid		
Particle theory		
Describe density in terms of particle arrangement		
Use Density = mass/volume to calculate values and use the correct units		
Explain the term 'internal energy'		
Describe differences in particle arrangement and energy in solids, liquids and gases		
Explain what happens to particles during a change of state		
Use the equation E=mL to calculate mass, specific latent heat or energy		
Distinguish between specific heat capacity and specific latent heat		
Define the terms specific latent heat, latent heat of fusion, latent heat of vaporisation		

Atoms and Nuclear Physics		
Label the parts of an atom and state approximate sizes of the atom and the nucleus		
Explain what might cause changes in distance of electrons from the nucleus		
Describe the changes to the atomic model over time, and why those changes were made		
Describe what is meant by an isotope and describe some of their uses		
Describe the properties and origins of alpha, beta and gamma radiation		
Complete nuclear equations for alpha and beta decay		
Describe what is meant by the half-life of a radioactive isotope and obtain values for this from a decay curve		
Choose an appropriate source for a particular purpose		
Explain the difference between contamination and irradiation and compare the hazards of each		