	Physics Paper 1 Tick List			
	P1 Energy			
1.	Describe a system as an object or a group of objects			
2.	Describe the changes involved in the way energy is stored when a system changes			
3.	Calculate kinetic energy, give units (learn equation), rearrange equation			
4.	Calculate elastic potential energy, give units (this equation is given) rearrange equation			
5.	Calculate gravitational potential energy, give units (learn equation)			
6.	Define power as the energy transferred per second or the rate at which work is done.			
7.	Define work done and link to energy transferred			
8.	Calculate power (learn both equations), use units, rearrange equation **P= E/t and P=W/t**			
9.	Describe the law of conservation of energy as energy cannot be created or destroyed			
10.	Give examples of energy changes in a closed system			
11.	Describe what 'wasted' energy is			
12.	Explain ways of reducing unwanted energy transfers			
13.	Describe what thermal conductivity is and how the thermal conductivity of a material effects the rate of conduction			
14.	Describe what effects the rate of cooling of a building			
15.	Calculate efficiency (need to learn)			
16.	**Describe how to increase the efficiency of an energy transfer**			
P2 Current Electricity				
17.	Recognise and draw circuit symbols			
18.	Define electric current			
19.	Calculate charge, give units, be able to rearrange (need to learn)			
20.	Calculate potential difference, use units, rearrange the equation(need to learn)			
21.	Describe what happens to current and p.d in a series circuit			
22.	Describe what happens to current and p.d in a parallel circuit			
23.	Describe what resistance is			
24.	Link the relationship between current, resistance and potential difference			
25.	Describe how resistance changes across different components			
26.	Describe current through an ohmic conductor			
27.	Interpret a current-potential difference graph for an ohmic conductor, filament lamp and a diode and describe how the resistance changes			
28.	Describe how resistance in a thermistor varies with temperature and give examples of its use			
29.	Describe how resistance in an LDR varies with light intensity and give examples of its use			
30.	Calculate current, potential difference and resistance in a dc series circuit			
31.	Calculate the total resistance of components in a series circuit			
32.	Describe how the total resistance of a parallel circuits changes with adding more resistors			
	Mains Electricity			
33.	Describe the main energy resources and compare how they are use and their reliability			
34.	Identify the energy sources as renewable or non-renewable			
35.	Describe the environmental impact of using the energy sources			
36.	Explain the design and use of dc series circuits for measurement and testing			
37.	Describe the difference between ac and dc			
38.	Give the potential difference and frequency of main electricity in the UK			
39.	Describe the structure and wiring of a 3-core plug			

40.	Explain the dangers of the live wire			
41.	Calculate power, give units, rearrange the equation (you need to learn these)			
42.	Explain the relationship between power transfer in a circuit device, the potential difference, current and the energy changes over time			
43.	Describe how appliances transfer energy			
44.	Describe what work done is			
45.	Calculate the energy transferred, give units, rearrange the equation (learn this)			
46.	Describe power in terms of energy transferred and time			
47.	Describe power in terms of potential difference and current across a component			
48.	Describe power in terms of current and resistance- use Current equation (learn this) to calculate.			
49.	Describe what the national grid is			
50.	Describe how energy is transferred along the national grid			
51.	Describe the function of transformers in the national grid			
52.	**Add in 'use & rearrange power in transformers equation on equations sheet to calculate primary and/or secondary voltage or current'**			
	P3 Particle Model of Matter			
53.	Calculate density, use units, rearrange equation (need to learn)			
54.	Describe differences in density of solids, liquids and gases in terms of their particle arrangement			
55.	Draw particle diagrams to represent solids, liquids and gases			
56.	Use the particle model to describe different states of matter and differences in density			
57.	Describe what happens during changes of state in terms of physical rather than chemical changes			
58.	Describe what internal energy is			
59.	Describe how heating changes the energy stored			
60.	Describe the effect of temperature increase on the system and what the increase depends on			
61.	Calculate change in thermal energy, be able to rearrange the equation & use correct units			
62.	Define specific heat capacity as the amount of energy required to raise the temperature of one kilogram of the substance by one degree Celsius.			
63.	Define latent heat of fusion, latent heat of vaporisation and specific latent heat			
64.	Compare specific heat capacity and specific latent heat			
65.	Interpret heating and cooling graphs			
66.	Explain how the motion of molecules in a gas is related to its temperature and pressure			
67.	Qualitatively explain the relationship between the temperature of a gas and its pressure at constant pressure			
	P4 Atomic Structure and Radiation			
68.	Describe what an atom is and describe its structure			
69.	Use atomic number and mass number to calculate the number of protons, neutrons and electrons			
70.	Describe what an isotope is			
71.	Define ion and describe how an atom changes into an ion			
72.	Describe the plum pudding theory of the atom			
73.	Describe how experimental evidence from the scattering experiment led to the nuclear model			
74.	Describe how experiments by Bohr and Chadwick led to development of the nuclear model			
75.	Describe what is meant by the term radioactive decay			
76.	Describe what activity is and its unit of measurement			
77.	Define count rate			

78.	Describe the differences between alpha, beta and gamma radiation and their range and what each is blocked by			
79.	Describe the uses of the different types of radiation and decide which source to use in a given situation			
80.	Represent alpha and beta decay with nuclear equations			
81.	Define half-life (there are two definitions)			
82.	Calculate half life			
83.	**Calculate the net decline ,as a ratio, in a radioactive emission after a given number of half-lives**			
84.	Describe what radioactive contamination is and the hazards associated with it			
85.	Describe what irradiation is, the hazards associated with it and precautions that can be taken.			