	Physics Paper 2 Tick List			
P5 Forces				
1.	Describe the difference between scalar and vector quantities			
2.	Describe the difference between distance and displacement			
3.	Describe the displacement of an object in terms of both magnitude and direction			
4.	Describe the difference between speed and velocity			
5.	Describe and identify what contact and non-contact forces are			
6.	Describe the interaction between pairs of objects which produce a force on each object, using Newton's third Law			
7.	Describe what a resultant force is			
8.	Calculate the resultant force of two forces that act in a straight line			
9.	***Describe examples of the forces acting on an isolated object or system***			
10.	***Draw free body diagrams to scale of the forces acting on an object or system***			
11.	***Describe how a force can be resolved***			
12.	***Draw vector diagrams to illustrate the resolution of forces and equilibrium situations***			
13.	***Use vector diagrams to determine the resultant of two forces, including the magnitude and direction of the force.***			
14.	Describe what weight is			
15.	Describe the difference between weight and mass and the relationship between the two			
16.	Identify the equipment used to measure weight			
17.	Describe what causes the force of gravity close to Earth			
18.	Recall and/or rearrange the equation to calculate weight and identify its units			
19.	Describe what the centre of mass is			
20.	Explain how to find the centre of mass for a regular object			
21.	Explain how to find the centre of mass for an irregular object			
	Motion			
22.	Recall and rearrange the equation to calculate speed and include the units			
23.	Calculate the average speed of an object in non-uniform motion			
24.	Identify typical values for the speed of a person walking, running and cycling and of forms of transportation			
25.	***Explain, using examples, why an object travelling in a circular motion has a constant speed but a changing velocity***			
26.	State Newton's First Law			
27.	***Describe what inertia is***			
28.	Describe the motion of an object on a distance-time graph			
29.	Use a distance-time graph to calculate speed			
30.	Draw distance-time graphs and extract and interpret lines and slopes of distance time graphs			
31.	***Draw tangent lines on a distance-time graph to determine the acceleration of an object***			
32.	Describe what acceleration is and identify it units			
33.	Recall and rearrange the equation, using changing velocity to calculate acceleration			
34.	Estimate the magnitude of everyday accelerations			
35.	Describe the motion of an object using a velocity time graph			
36.	Draw velocity time graphs from measurements			
37.	Use the gradient of velocity time graph to calculate acceleration			
38.	***Calculate the distance travelled by an object using a velocity time graph – both linear and non linear graphs***			
39.	Use and rearrange the correct equation on the Physics sheet to calculate uniform acceleration			
40.	Describe the acceleration of an object falling freely near the Earth's surface			
41.	State Newton's Second Law			
42.	Describe and explain what terminal velocity is			
43.	Explain how an object reaches terminal velocity			
44.	Draw and interpret velocity time graphs for objects that reach terminal velocity.			

Braking Forces				
45.	Describe what stopping distance, thinking distance and braking distance is			
46.	Describe what external factors might affect stopping, thinking and braking distances			
47.	Explain the implications for safety of the factors which affect the braking distance			
48.	Explain the forces involved in braking & stopping distances			
49.	Recall and rearrange the equation to calculate acceleration using resultant force and mass			
50.	***Explain what inertial mass is a measure of***			
51.	Describe the relationship between the speed of a vehicle and the stopping distance for a given braking force.			
52.	Identify the range of typical reaction times			
53.	Describe methods used to measure human reaction time			
54.	Describe what happens, in terms of energy and work done, what happens when a force is applied to the brakes of a vehicle			
55.	Define work done and identify it units			
56.	Recall and rearrange the equation to calculate work done			
57.	Describe the energy transferred when work is done			
58.	Describe the effect of work done against friction on the temperature of an object or system			
Momentum				
59.	***Describe what momentum is***			
60.	***Recall and rearrange the equation to calculate momentum***			
61.	***Describe the conservation of momentum***			
62.	***Describe and explain examples of momentum in an event, such as a collision***			
Forces & elasticity				
63.	Describe Hooke's Law			
64.	Recall and rearrange the equation to calculate the force applied to a spring using the spring constant and the extension			
65.	Describe what happens when a force is applied to an elastic object, in terms of work done and elastic potential energy (both stretching and compression)			
66.	Describe difference between elastic deformation and inelastic deformation caused by stretching forces			
67.	Describe the difference between a linear and non-linear relationship between a force and extension			
68.	Describe the relationship between work done and elastic potential energy of spring that has been either stretched or compressed			
69.	Use and rearrange the equation on the physics sheet to calculate the elastic potential energy and/or the work done on a spring			
P7 Waves				
70.	Describe the difference between transverse & longitudinal wave			
71.	Describe what a mechanical wave is, including sound waves			
72.	Draw and label a diagram of a transverse and longitudinal wave			
73.	Recall, rearrange & use the equation that links wave speed, frequency and wavelength, and give units			
74.	Use & rearrange the equation that links time period & frequency of wave (GIVEN on equation sheet)			
75.	List the order of electromagnetic waves in order of wavelength, energy and frequency			
76.	Identify the uses and hazards of all the electromagnetic waves			
77.	Describe how radio waves are produced and what happens when they are absorbed			
78.	***Explain why each type of electromagnetic wave is suitable for its application***			
P8 Magnetism & Electromagnetism				
79.	Describe the attraction and repulsion between like and unlike poles for permanent magnets			
80.	Describe the difference between permanent and induced magnets			
81.	Describe the factors that affect the strength of a magnetic field			
82.	Describe how to plot the magnetic field pattern of a magnet using a compass			
83.	Draw the magnetic field pattern of a bar magnet showing the strength and direction change from one to another			
84.	Explain how the behaviour of a compass is related to evidence that the core of the Earth			

	is magnetic			
85.	Describe how the magnetic effect of a current can be demonstrated			
86.	Draw the magnetic field pattern for a straight wire carrying a current and for a solenoid			
87.	Describe what a solenoid and an electromagnet is			
88.	Explain how to increase the strength of an electromagnet			