Cambridge IGCSE : Physics : 0625 italic = extended / supplement material	Page numbers in New Physics for You
1. General Physics	
1.1 Length and time	
-use and describe the use of rules and measuring cylinders to determine a length or a volume	pages 8, 75, 365
-use and describe the use of a mechanical method for the measurement of a small distance	
-use and describe the use of clocks and devices for measuring an interval of time.	9
-measure and describe how to measure a short interval of time (including the period of a pendulum)	9
1.2 Speed, velocity and acceleration	
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-plot and interpret a speed/time graph or a distance/time graph	123 – 126
-recognise from the shape of a speed/time graph when a body is (a) at rest, (b) moving with constant speed, (c) moving with changing speed	124
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-recognise linear motion for which the acceleration is constant and calculate the acceleration	124-5
-recognise motion for which the acceleration is not constant	124-5
-calculate the area under a speed/time graph to determine the distance travelled for motion with constant acceleration	125
-demonstrate some understanding that acceleration is related to changing speed	124
-state that the acceleration of free fall for a body near to the Earth is constant	128-9
-describe qualitatively the motion of bodies falling in a uniform gravitational field with and without air resistance (including reference to terminal velocity)	89, 128
1.3 Mass and weight	
-show familiarity with the idea of the mass of a body	9, 68

-state that weight is a force	page 65
-demonstrate an understanding that mass is a property which 'resists' change in motion	68, 130
-demonstrate understanding that weights (and hence masses) may be compared using a balance	67, 75
-describe, and use the concept of, weight as the effect of a gravitational field on a mass	65, 67, 131
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-describe the determination of the density of an irregularly shaped solid by the method of displacement and make the necessary calculation	75
1.5 Forces	
(a) Effects of forces -state that a force may produce a change in size and shape of a body	65
-plot extension/load graphs and describe the associated experimental procedure	66
-interpret extension/load graphs	66
-state Hooke's Law and recall and use the expression $F = k x$	66
-recognise the significance of the term 'limit of proportionality' for an extension/load graph	66
-describe the ways in which a force may change the motion of a body	69
-find the resultant of two or more forces acting along the same line	86
-recall and use the relation between force, mass and acceleration (including the direction)	130-131
-describe, qualitatively, motion in a curved path due to a perpendicular force ($F = mv2 / r$ is not required)	70-71
(b) Turning effect -describe the moment of a force as a measure of its turning effect and give everyday examples	90
-describe, qualitatively, the balancing of a beam about a pivot	91
-perform and describe an experiment (involving vertical forces) to verify that there is no net moment on a body in equilibrium	91
-apply the idea of opposing moments to simple systems in equilibrium	91

(c) Conditions for equilibrium -state that, when there is no resultant force and no resultant turning effect, a system is in equilibrium.	pages 86-87, 91
(d) Centre of mass -perform and describe an experiment to determine the position of the centre of mass of a plane lamina.	92-93
-describe qualitatively the effect of the position of the centre of mass on the stability of simple objects.	93
(e) Scalars and vectors *-demonstrate an understanding of the difference between scalars and vectors and give common examples*	86
-add vectors by graphical representation to determine a resultant	86
-determine graphically a resultant of two vectors	86
1.6 Energy, work and power	
(a) Energy -demonstrate an understanding that an object may have energy due to its motion or its position, and that energy may be transferred and stored	10-11, 97-99
-give examples of energy in different forms, including kinetic, gravitational, chemical, strain, nuclear, internal, electrical, light and sound	10-11, 98
-recall and use the expressions k.e.= ½ mv2 and p.e. = mgh	108-109
-give examples of the conversion of energy from one form to another and of its transfer from on place to another	11, 98, 100-101
-apply the principle of energy conservation to simple examples	98
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(ii) water, including the energy stored in waves, in tides, and in water behind hydroelectric dams	15, 101, 106
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(iv) nuclear fission	349
(v) heat and light from the Sun	14, 103
-show an understanding that energy is released by nuclear fusion in the Sun	156
-show a qualitative understanding of efficiency	102
(c) Work -relate, without calculation, work done to the magnitude of a force and the distance moved	97
-describe energy changes in terms of work done	99
-recall and use $\Delta W = Fd = \Delta E$	97-99

(d) Power -relate, without calculation, power to work done and time taken, using appropriate examples	page 110
-recall and use the equation P = E/t in simple systems	110-111
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-recall and use the equation p = F/A	77
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-relate, without calculation, the pressure beneath a liquid surface to depth and to density, using appropriate examples	78
-use and describe the use of a manometer	80
-recall and use the equation p = hρg	78
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(a) States of matter -state the distinguishing properties of solids, liquids and gases	17
(b) Molecular model -describe qualitatively the molecular structure of solids, liquids and gases	16-18
-relate the properties of solids, liquids and gases to the forces and distances between molecules and to the motion of the molecules	17-18
-interpret the temperature of a gas in terms of the motion of its molecules	18, 20, 27, 34
-describe qualitatively the pressure of a gas in terms of the motion of its molecules	34
-describe qualitatively the effect of a change of temperature on the pressure of a gas at constant volume	32, 34
-show an understanding of the random motion of particles in a suspension as evidence for the kinetic molecular model of matter	18
-describe this motion (sometimes known as Brownian motion) in terms of random molecular bombardment	18
-show an appreciation that massive particles may be moved by light, fast moving molecules	18

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-recognise the need for and identify fixed points	
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-describe condensation and solidification	(56, 54)
-use the terms latent heat of vaporization and latent heat of fusion and give a molecular interpretation of latent heat	pages 53, 55
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-give a simple molecular account of heat transfer in solids	41
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-state that charge is measured in coulombs	245

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-describe their deflection in electric fields	309, 310
-state that the particles emitted in thermionic emission are electrons	308
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5. Atomic Physics	
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-show awareness of the existence of background radiation	pages 340, 350
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-state that radioactive emissions occur randomly over space and time	page 339
-state, for radioactive emissions: (i) their nature (ii) their relative ionising effects (iii) their relative penetrating abilities	340-341
-describe their deflection in electric fields and magnetic fields	340-341
-interpret their relative ionising effects	340-341
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-use the term nucleon number A	343
-use the term nuclide and use the nuclide notation $^{A}_{B}X$	343
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-give and explain examples of practical applications of isotopes	346-347
end of specification content	