https://qualifications.pearson.com/en/qualifications/edexcel-a-levels/physics-2015.html

Concept led approach.

Topic 1: Working as a Physicist

Students should:	
1.	know and understand the distinction between base and derived quantities and their SI units
2.	be able to demonstrate their knowledge of practical skills and techniques for both familiar and unfamiliar experiments
3.	be able to estimate values for physical quantities and use their estimate to solve problems
4.	understand the limitations of physical measurement and apply these limitations to practical situations
5.	be able to communicate information and ideas in appropriate ways using appropriate terminology
6.	understand applications and implications of science and evaluate their associated benefits and risks
7.	understand the role of the scientific community in validating new knowledge and ensuring integrity
8.	understand the ways in which society uses science to inform decision making

Topic 2: Mechanics

9.	be able to use the equations for uniformly accelerated motion in one dimension: $s = \frac{(u+v)t}{2}$ $v = u + at$ $s = ut + \frac{1}{2}at^2$ $v^2 = u^2 + 2as$
10.	be able to draw and interpret displacement-time, velocity-time and acceleration-time graphs
11.	know the physical quantities derived from the slopes and areas of displacement-time, velocity-time and acceleration-time graphs, including cases of non-uniform acceleration and understand how to use the quantities

9) http://hyperphysics.phy-astr.gsu.edu/hbase/mot.html#motcon

10 & 11) http://hyperphysics.phy-astr.gsu.edu/hbase/acons.html#c1

12.	understand scalar and vector quantities and know examples of each type of quantity and recognise vector notation
13.	be able to resolve a vector into two components at right angles to each other by drawing and by calculation
14.	be able to find the resultant of two coplanar vectors at any angle to each other by drawing, and at right angles to each other by calculation

12 & 13 & 14) http://hyperphysics.phy-astr.gsu.edu/hbase/vect.html#veccon

15.	understand how to make use of the independence of vertical and horizontal motion of a projectile moving freely under gravity
16.	be able to draw and interpret free-body force diagrams to represent forces on a particle or on an extended but rigid body

15) http://hyperphysics.phy-astr.gsu.edu/hbase/traj.html#tracon

16) http://hyperphysics.phy-astr.gsu.edu/hbase/freeb.html#fb

17.	be able to use the equation $\sum F = ma$, and understand how to use this equation in situations where *m* is constant (Newton's second law of motion), including Newton's first law of motion where $a = 0$, objects at rest or travelling at constant velocity *Use of the term terminal velocity is expected*
18.	be able to use the equations for gravitational field strength $g = \frac{F}{m}$ and weight $W = mg$
19.	**CORE PRACTICAL 1: Determine the acceleration of a freely-falling object.**
20.	know and understand Newton's third law of motion and know the properties of pairs of forces in an interaction between two bodies

17) http://hyperphysics.phy-astr.gsu.edu/hbase/Newt.html#nt2cn

18) http://hyperphysics.phy-astr.gsu.edu/hbase/mass.html#wgt

19) http://hyperphysics.phy-astr.gsu.edu/hbase/traj.html#ffall

20) http://hyperphysics.phy-astr.gsu.edu/hbase/Newt.html#nt3

21.	understand that momentum is defined as $p = mv$
22.	know the principle of conservation of linear momentum, understand how to relate this to Newton's laws of motion and understand how to apply this to problems in one dimension

21) http://hyperphysics.phy-astr.gsu.edu/hbase/mom.html#mom

22) http://hyperphysics.phy-astr.gsu.edu/hbase/conser.html#conmom

23.	be able to use the equation for the moment of a force, moment of force = Fx where x is the perpendicular distance between the line of action of the force and the axis of rotation
24.	be able to use the concept of centre of gravity of an extended body and apply the principle of moments to an extended body in equilibrium

23) http://hyperphysics.phy-astr.gsu.edu/hbase/torq.html#torq

24) http://hyperphysics.phy-astr.gsu.edu/hbase/handb.html#bal

25.	be able to use the equation for work $\Delta W = F\Delta s$, including calculations when the force is not along the line of motion
26.	be able to use the equation $E_k = \frac{1}{2}mv^2$ for the kinetic energy of a body
27.	be able to use the equation $\Delta E_{grav} = mg\Delta h$ for the difference in gravitational potential energy near the Earth's surface
28.	know, and understand how to apply, the principle of conservation of energy including use of work done, gravitational potential energy and kinetic energy
29.	be able to use the equations relating power, time and energy transferred or work done $P = \frac{E}{t}$ and $P = \frac{W}{t}$

25) http://hyperphysics.phy-astr.gsu.edu/hbase/wcon.html

26) http://hyperphysics.phy-astr.gsu.edu/hbase/ke.html#ke

27) http://hyperphysics.phy-astr.gsu.edu/hbase/pegrav.html#pe

28) http://hyperphysics.phy-astr.gsu.edu/hbase/conser.html#coneng

29) http://hyperphysics.phy-astr.gsu.edu/hbase/powcon.html