

Science work – Year 12 – A level Physics

The tasks to work through each week from your CGP guide, textbook and workbook from June 15th until the end of the summer term are given below. The assessment opportunities are listed below and a series of tasks to complete in lieu of lessons are given. The digital version of this sheet is available from the Thomas Deacon website, on this downloadable sheet, the links can be clicked and accessed. Only the name of the site is given on the printed sheet. You have Kerboodle login details too which can still be used to access additional resources and an online text book.

Week	Topic	Reference pages	Assessment tasks	Additional resources
For the next three weeks	Thermal Physics	Guide pages 102-103 Textbook pages 268-284	Text book Summary questions pages 279 and 283 Pages 284 – 285 Workbook 70-72	Physics and Maths tutor Past papers OCR Khan academy
Week of 15/6/20 Temperature, solids liquids and gases, internal energy	Task Instructions: Define triple point, thermal equilibrium and absolute zero. Explain - What is the Zeroth law of thermodynamics? And how the principles of conservation of energy apply to this. What are the differences and similarities of the Kelvin and Celsius scale? – compare and contrast these two scales. Compare solids, liquids and gases in terms of their kinetic energy, Motion and density. Starting with 0 Kelvin, for pure water explain how the internal energy changes as it is heated to 400 Kelvin.			
Week of 22/6/20 Specific heat capacity	Task Instructions: Write a method for an experiment to determine the specific heat capacity of 1kg block of aluminium. How would you use the results to determine the specific heat capacity? Temperature - time graphs can be used for a more accurate determination of specific heat capacity, explain how? What is the method of determining the specific heat capacity for a mixture? Using the example of a plastic block and water, explain how the method described can be used. What is constant – volume - flow heating?			
Week of 29/6/20 Specific latent heat	Task Instructions: What is specific latent heat? Explain the difference between specific latent heat of fusion and specific latent heat of vaporisation and give the equations for both. Give three examples where a company would need to know the specific latent heat of vaporisation. Complete workbook pages.			
For next two weeks	Capacitors	Guide pages 140-143 Textbook pages 406 - 424	Text book Summary questions Pages 407, 411,414,419, 421, 423 Pages 424 - 425 Workbook – 99-103	Physics and Maths Tutor Past Papers OCR Khan Academy
Week of 6/7/20 Capacitors	Task Instructions: What is a capacitor and how does it work? The equation $Q = VC$ can be used calculate capacitance, what are the units, and what measurements would need to be taken to do this. Capacitors can be connected in series and parallel, explain how the voltage is affected in each case. How can overall capacitance be calculated in each case? Explain how a potential difference - charge graph can be used to determine the energy stored in a capacitor. Complete relevant workbook and summary questions.			
Week of 13/7/20 Capacitors	Task Instructions: Explain what happens as a capacitor is discharged. How would a graph of the discharge of a capacitor display exponential decay. How can calculations be used to predict the charge lost and the time taken to discharge? What equations are used to determine the charging of a capacitor? How are capacitors used for smoothing voltage? Complete relevant workbook and topic summary questions.			