

Science work – Year 12 – Btec National Applied Science – Extended certificate

The tasks to work through each week from your textbook 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. This is material from Unit 3.

Week	Topic	Reference pages	Assessment tasks	Additional resources
For the next three weeks	Unit 3	Textbook pages Learning aim A – 145 -148 Learning aim D – 173 - 182 Learning aim E – 183 - 188	Text book Assessment practise Page 149 and 182 Page 185 Case study	Official Btec site Enzymes – A -level Diffusion A -level
Week of 15/6/20 Learning aim A Planning	Task Instructions: Explain what should and shouldn't be included in a hypothesis. What things would you need to consider when planning an investigation? Make a list. Define independent, dependent and control variables. A proper risk assessment contains, both the hazard and the risk. How are these different? Compare and contrast the terms accuracy and precision.			
Week of 22/6/20 Learning aim D Enzymes	Task Instructions: Protein structure – Explain what an amino group is, a variable R group, and a carboxyl group. What happens in a condensation reaction of amino acids to create proteins. Explain how hydrogen bonds are used to hold protein structures together. Explain how enzymes work using the terms – active site, substrate, denature, activation energy, and enzyme – substrate complex.			
Week of 29/6/20 Learning aim D Enzymes	Task Instructions: Explain the effects of temperature and pH on enzyme function. Use the example of fermentation reactions to explain how enzymes are used in industry. Read through the example plan in the textbook. Use this as a basis to plan out one of the examples listed at the bottom of page 181. E.g. The effect of temperature on the action of protease in milk.			
Week of 6/7/20 Learning aim E Diffusion	Task Instructions: Define diffusion. Explain how rate of diffusion can be explained using kinetic theory. How do the following have an effect on the rate of diffusion – concentration gradient, shape and size of molecules, temperature, distance between particles and surface area.			
Week of 13/7/20 Learning aim E Diffusion	Task Instructions: Diffusion continued - What is Brownian motion? How does this help to explain diffusion? Compare the movement and arrangement of particles in solids, liquids and gases. What would happen to the rate of diffusion as a material nears absolute zero? What is dynamic equilibrium? Explain how dynamic equilibrium can be used to explain the outcome of diffusion.			