



# Cotswold Edge Sixth Form



<b>Subject:</b>	Applied Science @ YA	<b>Assessment Point 1 - Coursework</b>
<b>Title of the project:</b>	Preparing to Apply Science	
<b>Due date:</b>	First lesson back September 2018	
<b>Learning skills</b> and their place in the specification	<p><b>Skills:</b></p> <ol style="list-style-type: none"><li>1. Reading Scientific and Technical texts<ol style="list-style-type: none"><li>a. Identification and extraction of relevant and key information</li><li>b. Utilising a variety of different resources</li><li>c. Referencing using Harvard referencing system</li></ol></li><li>2. Effective writing and presentation<ol style="list-style-type: none"><li>a. Defining key terms</li><li>b. Accurately drawn scientific diagrams with annotation</li></ol></li><li>3. Numerical applications<ol style="list-style-type: none"><li>a. Utilising correct equations and rearranging them to change the subject of the equation.</li></ol></li></ol> <p><b>Links to Assessment objectives in the specification</b></p> <p>AO1: demonstrate knowledge of scientific facts, terms, definitions and formulae</p> <p>AO2: demonstrate understanding of scientific concepts procedures, processes, techniques and their applications</p>	
<b>Specification link</b>	<a href="https://qualifications.pearson.com/content/dam/pdf/BTEC-Nationals/Applied-Science/2016/specification-and-sample-assessments/9781446938157_BTECNat_AppSci_Cert_Spec_Iss2C.pdf">https://qualifications.pearson.com/content/dam/pdf/BTEC-Nationals/Applied-Science/2016/specification-and-sample-assessments/9781446938157_BTECNat_AppSci_Cert_Spec_Iss2C.pdf</a>	
<b>Tasks set</b>	To research and summarise some fundamentals of all 3 aspects of Science, which will form the foundations upon which to build for the externally assessed unit for the course. It is building up on knowledge from GCSE/Level 2 BTEC.	
<b>How this links to the exam specification</b>	Unit 1: Principles and Application of Science 1 A1: Structure and bonding applications in Science B1: Cell structure and function C1: Working with waves	
<b>How to complete the task:</b>	<p><b>Task 1: atomic structure and arrangement</b></p> <ul style="list-style-type: none"><li>- Draw an annotated diagram of the structure of an atom. You should include a description of the charge and mass of all three subatomic particles.</li><li>- Describe the arrangement of electrons in shells and draw the electron arrangement for the first 20 elements.</li><li>- Outline the difference between ionic and covalent bonding. Use diagrams to represent examples of each.</li></ul> <p><b>Task 2: cell structure and function</b></p> <ul style="list-style-type: none"><li>- Draw labelled diagrams of a prokaryotic (bacterial) cell, eukaryotic cell (animal) and eukaryotic cell (plant).</li></ul>	

	<ul style="list-style-type: none"> <li>- Describe the structure and function of the following organelles and identify which of the 3 cell types above they are found in: nucleoid, plasmids, centrioles, amyloplast, tonoplast, ribosomes, capsule, cell wall, plasma membrane, cytoplasm, flagella, vacuole, lysosomes, vesicles, nucleus, nucleolus, smooth endoplasmic reticulum, rough endoplasmic reticulum, Golgi apparatus, mitochondria, chloroplasts. This may be presented in the form of a table.</li> </ul> <p><b>Task 3: Features of waves</b></p> <ul style="list-style-type: none"> <li>- Define the following terms when related to waves: periodic time, wave speed, wavelength, frequency, amplitude, oscillation. Provide any formulae and units that may be relevant.</li> <li>- Draw a labelled diagram of a transverse wave and longitudinal wave. Explain the difference between them and provide examples of each type.</li> <li>- Give the equation for calculating wave speed and provide numerical examples for calculating each of the 3 factors involved (speed, frequency, and wavelength) with correct units.</li> </ul> <p>You can present your written work in any format you wish – typed in word/PowerPoint; hand written...this is left to your own discretion.</p> <p>All diagrams should be hand drawn on plain paper using a sharp pencil without shading/sketching.</p>
<b>Resources or links</b>	<p>All the information you will need can easily be found using the internet/books for research, but if in doubt these websites are a good starting point:</p> <p><b>Task 1</b></p> <ul style="list-style-type: none"> <li>• <a href="http://www.chemguide.co.uk/atoms/properties/gcse.html">http://www.chemguide.co.uk/atoms/properties/gcse.html</a></li> <li>• <a href="https://www.khanacademy.org/science/biology/chemistry--of-life/electron-shells-and-orbitals/a/the-periodic-table-electron-shells-and-orbitals-article">https://www.khanacademy.org/science/biology/chemistry--of-life/electron-shells-and-orbitals/a/the-periodic-table-electron-shells-and-orbitals-article</a></li> <li>• <a href="http://www.diffen.com/difference/Covalent+Bonds+vs+Ionic+Bonds">http://www.diffen.com/difference/Covalent Bonds vs Ionic Bonds</a></li> </ul> <p><b>Task 2</b></p> <ul style="list-style-type: none"> <li>• <a href="http://www.ck12.org/biology/Prokaryotic-and-Eukaryotic-Cells/lesson/Prokaryotic-and-Eukaryotic-Cells-BIO/">http://www.ck12.org/biology/Prokaryotic-and-Eukaryotic-Cells/lesson/Prokaryotic-and-Eukaryotic-Cells-BIO/</a></li> <li>• <a href="http://www.s-cool.co.uk/a-level/biology/cells-and-organelles/revise-it/organelles">http://www.s-cool.co.uk/a-level/biology/cells-and-organelles/revise-it/organelles</a></li> </ul> <p><b>Task 3</b></p> <ul style="list-style-type: none"> <li>• <a href="http://physics.tutorvista.com/waves.html">http://physics.tutorvista.com/waves.html</a></li> <li>• <a href="http://www.bbc.co.uk/bitesize/higher/physics/radiation/waves/revision/1/">http://www.bbc.co.uk/bitesize/higher/physics/radiation/waves/revision/1/</a></li> </ul> <p>You should reference your resources using HARVARD referencing. An outline of how to do this can be found here: <a href="http://www.citethisforme.com/harvard-referencing">http://www.citethisforme.com/harvard-referencing</a></p>
<b>Staff contact and email address:</b>	Mr Bolster: Patrick.Bolster@yateacademy.co.uk or Mr Millett: ben.millett@yateacademy.co.uk
<b>Number of learning hours it will take to complete</b>	Minimum 10 hours