**BTEC Applied Science – Bridging Work**

The BTEC Applied Science course is made up of 3 parts:

An exam in year 12

Coursework completed in Year 12 and 13

A practical exam in Year 13

The work outlined below focuses on some of the key topics from the exam sections of the course and some interesting parts from around the topics we will study. For the work outline below you nee to research the topic and write and draw the notes and collate them together. Please avoid using a computer for making the notes but if you feel you must put it in your own words. When you have completed a task mark it as completed with the date you did it on.

The Deadline for this work is the 1st lesson back in September to bring in all your work completed.

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| Topic | Task | Completed | Teacher Assessment |
| Chemistry Atomic structure and bonding | Draw and label an Atom |  |  |
| Using the examples of Na, F, Cl, C, N explain how to calculate number of protons, neutrons and electrons |  |  |
| Draw the electronic structure for Ca, Cl, Ne, C |  |  |
| Define Ionic Bonding include 2 dot cross diagrams |  |  |
| Define Covalent bonding include the dot cross diagrams for CO2 H2O and CH4 |  |  |
| Draw the model of metallic bonding and explain how this structure allows metal to conduct electricity |  |  |
| Chemistry Articles | Follow these links to 2 articles which I hope you find interesting and relate to the topics you will study  <https://www.sciencenewsforstudents.org/blog/eureka-lab/changing-world-chemistry>  <https://www.sciencenewsforstudents.org/article/chemistrys-ever-useful-periodic-table-celebrates-big-birthday> | | |
| Biology Cells Structure | Draw the following cells prokaryotic cell, eukaryotic cell of a plant and animal. Include in the diagram the labels of the organelles that make up the cells |  |  |
| Describe the difference between the light microscope and electron microscope |  |  |
| Explain how magnification is used to calculate the size of a cell |  |  |
| Biology Articles | Follow these links to 2 articles which I hope you find interesting and relate to the topics you will study  <https://www.sciencenewsforstudents.org/article/stem-cell-any-cell>  <https://www.sciencenewsforstudents.org/article/explainer-prokaryotes-and-eukaryotes> | | |
| Physics  Waves | Waves – Using examples describe the difference between longitudinal and transverse waves |  |  |
| Draw and label a wave and explain the following terms: speed, periodic table, wavelength, frequency, amplitude and oscillation |  |  |
| Describe the wave equation what are the units for each part of the wave equation |  |  |
| Physics Articles | Follow these links to 2 articles which I hope you find interesting and relate to the topics you will study  <https://www.sciencenewsforstudents.org/article/explainer-locating-gun-sound-waves>  <https://www.sciencenewsforstudents.org/article/how-fireworks-shower-skies-science> | | |
| Optional Poster Project – as part of the BTEC you will have to demonstrate that you understand a topic by either carrying out practical work, writing reports or producing displays. For the 3 topics below you need to research the topic and make a poster to display what you have found out. You can use online resources, videos, revision guides or anything else to help your research. | | | |
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| Topic | Task | Completed | Teacher Assessment |
| Biology | Specialised cells – how some cells specialised for their function examples palisade cells, blood cells, root hair cells, sperm and egg |  |  |
| Chemistry | Periodicity – Research the chemical and physical properties of periods 2 and 3 in the periodic table |  |  |
| Physics | Waves – Research how different sections of the electromagnetic spectrum are used in communication |  |  |