Welcome to BTEC Level 3 Applied Science

Pre-course study report

Welcome to BTEC Applied Science. The purpose of this summer mailing is to prepare you to start your study of BTEC Level 3 Applied Science at Long Road Sixth Form College this autumn.

As you make the transition from GCSE to Level 3 studies you may find that you are expected to do much more independent reading, revision and research outside of lessons. This task will help you to make a start.

There are three tasks for you to complete
Task one: Report writing task:

BTEC Level 3 Applied Science portfolio-based. In preparing these portfolios, you will need to write/produce a number of reports.

To do this, you will need to successfully research, find and extract relevant information from a number of sources both internet-sourced and non-internet sourced (e.g. books, journals or personal contacts for example).

You will need to structure and summarise this information and produce a coherent and logical report avoiding any plagiarism or copy and paste!

Please visit & go through the following websites for guidance on summarising and avoiding plagiarism:

http://www.buowl.boun.edu.tr/students/avoidingplagiarism.htm

http://owl.english.purdue.edu/owl/resource/563/03/

Your Task:

Follow the guidelines on these websites and the following strategy on how to summarise to produce a 250 word report on: “The Development of the Theory of Evolution”.

A good strategy in summarising a text you have read is:

- Read the text several times but do not make any notes. During your first reading you may be tempted to take extensive notes, but later you may find out that you do not need them. Therefore, read without making notes but interacting with the author. That is, familiarise yourself with the text, the author, the main ideas and arguments, etc.

- List the key ideas and supporting arguments

- Rank them in order of importance before writing them up

Please include a word count at the end (to show how many words are in your report). The word count should be within 10% of the recommended 250 words.

Remember to list the websites that you have used in preparing your report.

Microsoft Word has a ‘references’ menu. In this is a drop down menu for ‘citations and bibliography’ – this is a good way to insert reference citations in the text and produces a bibliography that can be inserted at the end of the report – give it a go!
Task two: preparation for working with chemicals:

Please complete each of the following tasks, this is to give an idea of what you have been taught and understood from your GCSE programme.

Section 1

1. What is the formula for each molecule shown below:

   a) \( \text{H}_2\text{I} \)  
   b) \( \text{O}_2\text{C}_2\text{O}_2 \)  
   c) \( \text{S}_2\text{H}_2\text{H}_2 \)  
   d) \( \text{F}_2\text{B}_2\text{F}_2 \)

2. Which of the following substances are elements and which are compounds?
   a) He   b) \( \text{H}_2 \)   c) CO   d) \( \text{Cl}_2 \)   e) \( \text{S}_8 \)   f) \( \text{NBr}_3 \)

Section 2

Write the full balanced chemical equation for each of the following reaction:

<table>
<thead>
<tr>
<th>Chemical reaction</th>
<th>Equation</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium hydroxide (NaOH) + dilute hydrochloric acid (HCl)</td>
<td></td>
</tr>
<tr>
<td>sodium hydrogencarbonate (Na(_2)CO(_3)) + dilute nitric acid</td>
<td></td>
</tr>
</tbody>
</table>

Section 3

a) What is the name given to a chemical reaction when an equal volume of acid reacts with alkali?

b) What is the chemical name for common salt?

c) Which salts are produced by i) Hydrochloric acid, ii) Sulfuric acid, iii) Nitric acid?

Section 4

Complete the following table with the missing terms: Magnesium, 3, 1.00, 650, fairly strong, 0.26, 1, Sodium.

<table>
<thead>
<tr>
<th>Metal</th>
<th>Number of electrons in the last shell</th>
<th>Melting Point (°C)</th>
<th>Electrical conductivity</th>
<th>Strength of metallic bonding in the metal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium</td>
<td>8</td>
<td>98</td>
<td>0.42</td>
<td>Weakest</td>
</tr>
<tr>
<td>Aluminium</td>
<td>2</td>
<td>661</td>
<td></td>
<td>Strongest</td>
</tr>
</tbody>
</table>
**Task three: communicating:**

*Induction work*

Complete a presentation on an area of personal interest this could be any of the following: e.g. your mobile phone/sport/drama/music/employment/family

1. Your Presentation will need to be a maximum of 5 slides you can use either windows PowerPoint or Prezi [http://prezi.com/](http://prezi.com/) (for the latter you will need to register)

2. One key idea/slide (each slide should have a maximum of 5 sentences)

3. Each sentence should be 5 words maximum

4. You can include images/diagrams/animations/video clips

5. Include references (if required) including the date when the information was accessed using a referencing system such as the Harvard system as instructed using the following link:- [http://www.neiltoolbox.com/bibliography-creator/index.htm](http://www.neiltoolbox.com/bibliography-creator/index.htm) You can use the references dropdown menu in Microsoft Office to do this.

6. Your PowerPoint presentation should be a maximum of 5 slides

7. Save your presentation on a memory stick or in a cloud based application e.g. [https://www.icloud.com](https://www.icloud.com) or dropbox-[https://www.dropbox.com/](https://www.dropbox.com/)

8. You will be doing a presentation in your first lesson please let the course team leader (i.e. Huw Williams) know if there is a problem with doing the presentation; e-mail address: hwilliams@longroad.ac.uk

9. Write your presentation notes

10. Bring this with you to the first lesson along with the following:-
    
    a. Pen, pencil case  
    b. Scientific calculator

    And a memory stick with your presentation on it…
Please bring the work with you to your first lesson in Applied Science

AND remember to bring pen, pencil, ruler, eraser, calculator and paper too!

See you there.....