



Summer Tasks July 2019

So, you think you would like to study: **BTEC Level 3 Applied Science**

Summer Task Title/Instructions:

Complete the assignment on page 2 onwards.
Become familiar with the command words and their meanings on page 4

Suggested Additional Reading:

BTEC Level 3 Nationals Applied Science Student Book 1 (ISBN: 9781292134093) – This is the course text book and it is recommended that you have a copy to use in school and at home.

Annets, F., *Applied Science L3 BTEC National*, Pearson Education, 2010 (ISBN: 978-1846906800).

www.rcs.org - Royal Society of Chemistry website – resources and videos to support the learning of chemistry.

www.nationalstemcentre.org.uk - National STEM (Science Technology Engineering and Mathematics) Centre website – resources for supporting delivery and learning, links with employers and industry.

<http://chemistry.about.com> - About Chemistry website – engaging chemistry practical demonstrations and videos.

www.cleapss.org.uk - Health and safety information when handling chemicals and performing experiments.

<http://www.chemguideforcie.co.uk> - Jim Clark's Chemguide material supports chemistry at level 3 and level 4. It is exceptionally useful.

Scientific Journals

Chemistry World www.rsc.org/chemistryworld

Education in Chemistry www.rsc.org/Education/EiC

Nature www.nature.com

New Scientist www.newscientist.com

Please submit the task to your teacher on the first lesson in September. Feel to do multiple summer tasks if you are unsure on what subjects to study.

Qualification	Pearson BTEC Level 3 National Extended Certificate in Applied Science Pearson
Unit number and title	Summer Task 2017
Assignment title	The Testers Test
Learning aims(s)	S: To show your organisational, practical and documentations skills.
Issue date	
Hand in deadline	First BTEC lesson back in September

Vocational Scenario or Context	Instead of deleting a spam marketing text message you have replied to it. To your surprise it is genuine and better still there is the need to carry out some scientific investigation. The company – Burn be Gone, want help in producing a new line of indigestion remedies. The company require you to produce a valid and repeatable set of results and document your work. To ensure your data can be tested the company have sent you a method to follow but understand that you will only be using normal kitchen equipment during the data collection.
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Task 1	<p>Produce a report to evaluate your findings into the strength of your household vinegar</p> <ul style="list-style-type: none"> You need to demonstrate that you can set up the appropriate equipment Carry out the investigation safely Collect data in a suitable results table <p>You may wish to consider:</p> <ul style="list-style-type: none"> Any patterns shown in your data Any weaknesses in your work Improvements that could be made and the effect these would have
Checklist of evidence required	<p>A report documenting:</p> <ul style="list-style-type: none"> How you safely carried out your investigation The equipment you used A table of data collected Analysis and explanation of your results Evaluation of the accuracy of your work

Criteria covered by this task:

Unit/Criteria reference	To achieve the criteria you must show that you are able to:
S.D1	Evaluate the accuracy of the practical work in relation to the equipment available and a possible way to extend your work further.
S.M1	Analysis of the data collected.
S.P1	Obtain a set of data for the testers safely.
S.P2	Determine the total amount of Sodium hydrogen carbonate needed to neutralise your vinegar (stomach acid).

Sources of information to support you with this Assignment

<https://www.youtube.com/watch?v=nCFahAe5SYc>

https://www.youtube.com/watch?v=JKXaNR_DITw

<http://www.rsc.org/>

Burn be Gone Method:

1. Measure out 5g (a table spoon) of sodium hydrogen carbonate (bicarbonate of soda) and add to a suitable container.
2. Measure out 5ml (a tea spoon) of vinegar (stomach acid).
3. Pour the vinegar into the container with the sodium hydrogen carbonate.
4. Document any observations in a table of results with a focus on the strength of the reaction.
5. Add a further 5ml of vinegar to the same container and record observations and document again.
6. Continue to repeat step 5, until there is no longer a reaction. (This can take up to 100ml of vinegar).
7. Repeat the whole process at least once more to ensure your data is correct.

Burn be Gone suggested report format:

Clear Title and headings on the report (don't forget to include your name)

List of equipment used

The safety procedures you have followed (our customer safety is our priority) and action to be taken if something were to go wrong.

A table of data with column headers and units, repeats and an average if required. Observation notes should also be included in this table

Documentation of the practical you have carried out – photographs of you carrying out the work and/or diagrams of the equipment set up.

A clearly laid out conclusion of the data you have collected – describe any trends and patterns, any anomalous data. Try to show scientific understanding of the data.

Finally evaluate your work – think about the strengths and weaknesses of your work. What could have been done better (maybe if it had been in a lab and not your kitchen). How would these changes have improved the data?

Command Words

Analyse – identify separate factors; say how they are related & how each one contributes to the topic.

Assess – give careful consideration to all the factors that apply & pick the ones that are most relevant.

Appraise – consider the positive & negative points and give a reasoned judgement.

Assess – determine the importance, size or value of something.

Compare – identify the main factors that apply in 2 or more situations. Explain the similarities & differences or advantages & disadvantages.

Comment – give your view after you have considered all the evidence. Decide the importance of all the relevant positive and negative aspects.

Criticise – review a topic or issue objectively and weigh up both positive and negative points before making a decision.

Describe – give all important features. It's like painting a picture with words.

Define – explain an important word or term. Give an example of what you mean if it helps.

Design – create a plan or outline to demonstrate a simple idea.

Demonstrate – give several examples or related evidence which supports the argument you are trying to make. This may include practical skills.

Design – create a plan or proposal for a relatively complex idea.

Draw conclusions – use the evidence you have provided to reach a reasoned judgement.

Evaluate – review the information then bring it together to form a conclusion. Give evidence for each of your views or statements. Support judgements.

Explain – give details of the meaning of something, with reasons. More detailed than 'describe' or 'list'. Always ask yourself 'how?' or 'why?'

Identify – point out or choose the right one or give a list of key features.

Illustrate – include examples or diagrams to show what you mean.

Interpret – define or explain the meaning of something.

Justify – give reasons or evidence to support your opinion to show how you came to your conclusion.

List – provide a list of information, not continuous writing.

Outline – give a description, a general plan or a summary of important information, but no detail.

Plan – work out how you would carry out an activity or task.

State – provide a clear and full account of information.

Summarise – give a brief description of the main points or features.