

BTEC Level 3 National Diploma in Applied Science

Transition work



This qualification consists of eight units, and combines theory with the practical skills required for a career or further study in the scientific sector. Assessment is through examinations, written coursework and laboratory work. You will carry out your own independent investigative project. The course covers a mix of biology, chemistry and physics, building upon GCSE topics to give you a firm grounding in all aspects of science.

In the **BTEC National Diploma in Applied Science** you will study the following topics:

Unit 1: Principles and application of science*

Unit 2: Practical scientific procedures and techniques

Unit 3: Science investigation skills*

Unit 4: Laboratory techniques and their application

Unit 5: Principles and application of science II*

Unit 6: Investigative project

Unit 11: Genetics and genetic engineering

Unit 23: Forensic Evidence, Collection and Analysis

The course is assessed by a combination of internally assessed units (54%) and external examinations*(46%)

Prospectus information: You can find more information about BTEC Applied Science at Woking College, and the GCSE entry requirements for the course at the college website:

<https://woking.ac.uk/courses/vocational-courses/level-3-vocational-courses/applied-science/>

Specification and exam papers: You can find a copy of the specification at the Pearson website. The content of each unit starts on page 31 of this document. https://qualifications.pearson.com/content/dam/pdf/BTEC-Nationals/Applied-Science/2016/specification-and-sample-assessments/9781446938188_BTECNat_AppSci_Dip_Spec.pdf

Summer activities

The rest of this page contains suggestions for things you can do to keep you engaged with science over the summer. The number of magnifying glasses in the nearby table indicates the level of challenge of each task.

Choose whichever task that is most appealing to you, and do more than one if you want. Most importantly – have fun!

We'd like you to bring your investigation(s) to enrolment in August.

If you'd like to get in touch with any questions about the work, the BTEC Applied Science course or Woking College in general, please email Sarah Thomas at sth@woking.ac.uk or Susan Hammond at shd@woking.ac.uk.

Have a good summer and hope to see you in the autumn!

	Revision from GCSE, review existing knowledge to give you a good basic knowledge to build on.
	A more challenging task that will help you develop research and writing skills that you will use in Applied Science.
	This is a larger project that will require a bigger investment of time, but with more flexibility.



BBC Bitesize is a good place to start – revision, quizzes and tests. In Applied Science you will be building on your GCSE knowledge, so it would be good to brush up your skills. Go to <https://www.bbc.co.uk/bitesize/subjects/zrkw2hv> and choose one of the single science courses (Biology, Chemistry or Physics). Then choose AQA. Study each section and attempt the sample exam questions at the end of each section.

There are also BBC science lessons that cover topics you studied during Year 10 for Biology, Chemistry and Physics. A new science lesson is released every day

<https://www.bbc.co.uk/bitesize/tags/zr7447h/year-10-lessons/1>



Research and written communication

An important skill to develop in Applied Science is clear and precise communication in writing. You will often be asked to carry out your own research and summarise your findings in your own words.

1. Choose any video clips from BBC iPlayer (some suggestions are below).
2. Write a short summary of the clip you watched. What did it tell you?
3. Can you think of any questions that you would like to answer that weren't fully answered?
4. Do a bit of research to answer any unanswered questions. Briefly, write about your findings.

Explosions <https://www.bbc.co.uk/programmes/b00v9kb3/clips>,

Colour: <https://www.bbc.co.uk/programmes/p02vmwbt/clips>,

Temperature: <https://www.bbc.co.uk/programmes/b09rzq05/clips>,

Forces of nature: <https://www.bbc.co.uk/programmes/b07k8lpv/clips>,

Wonders of life: <https://www.bbc.co.uk/programmes/b01rgjt0/clips>



Silver CREST award

This is a nationally recognised scheme for student-led projects in the STEM subjects. Its aim is to enable young people to think like scientists and engineers, and is run by the British Science Association. I am an examiner for Silver and Gold awards, and will be happy to advise you on your project.

Undertake a Silver CREST award (for 14-16 year-olds) (there is a £10 fee if you want to make an official entry and receive a certificate, but you can also just complete a project to show us in August)

1. Go onto the CREST website at <https://www.crestawards.org/crest-silver>
2. Follow the links to “Silver student guides” and “Guidance of what’s expected at Silver level, with examples”. When I mark projects, it is not uncommon to have to send them for resubmission because students have not followed the guidance.
3. Click the link for resource library; look at any of the projects in the biology, chemistry or physics tabs. Many of them require a school lab, but they will give you an idea of what sort of thing you could choose. Here are some suggestions.
 - Indicators for acids and bases. This one gives details about red cabbage indicator <http://www.kitchenchemistry.eu/topics/reactions-that-involve-colour-changes/acid-base-indicators-from-cabbage-water-and-other-coloured-materials/>, black tea is an easy one to do. You should then research more. Write down a rough plan for what you are going to do each week. Do plenty of research, with proper references (look up Harvard references). Explain the science behind your experiments. Take lots of photos of your work. Explain what problems you had and how you overcame them. Think about safety.
 - Coffee filter chromatography <https://www.scientificamerican.com/article/chromatography-be-a-color-detective/>. Students frequently look at simple chromatography in Year 7, so you will have to make sure that you carry out the extension activities here, and also search for further ones. Research and explain the science behind chromatography (part of the A level course).
 - Sourdough bread making <http://studentsdiscover.org/lesson/sourdough-for-science/> (hints – to make a good sourdough starter, use some rye flour, and include a few sultanas in your first mix as this introduces yeasts). Lots of scope for research here, and plenty of practical work.