Pearson
BTEC

Teaching and learning support during Coronavirus (COVID-19)

Applied Science

Guidance for BTEC Nationals

Support

Last updated 15th May 2020

Formal assessment requirements

We have confirmed for BTEC Level 3 Nationals, BTEC Level 1 and 2 Firsts and Tech Awards, where we expect to be able to provide calculated results, we do not require or expect any formal assessment for BTEC to take place while learners are studying at home. We expect to collect centre assessment grades from teachers and tutors for any incomplete work for all learners and these judgements will be used in the calculation of a final result where relevant.

Supporting teaching and learning

Whilst not a requirement we are encouraging and supporting continued learning at home during this time, so when learners return to school or college, progress to HE, an apprenticeship, or work, they have the knowledge and skills they need to continue with confidence. We also recognise the benefits that learning and a structured day have on general health and wellbeing and we want to make sure that we are doing everything we can to best support you and your learners at this time.

Contents:

Qualifications in Applied Science that fall into the Calculated Result Category

Qual. No.	Qualification title
500/6726/6	Pearson BTEC Level 3 Certificate in Applied Science (QCF)
601/7434/1	Pearson BTEC Level 3 National Certificate in Applied Science
500/6725/4	Pearson BTEC Level 3 Subsidiary Diploma in Applied Science (QCF)
601/3492/6	Pearson BTEC Level 3 Diploma in Dental Technology
601/7436/5	Pearson BTEC Level 3 National Extended Certificate in Applied Science
600/5849/3	Pearson BTEC Level 3 90-credit Diploma in Applied Science (QCF)
601/7438/9	Pearson BTEC Level 3 National Foundation Diploma in Applied Science
603/0251/3	Pearson BTEC Level 3 National Foundation Diploma in Forensic Investigation
500/6673/0	Pearson BTEC Level 3 Diploma in Applied Science (QCF)
601/7435/3	Pearson BTEC Level 3 National Diploma in Applied Science
603/0246/X	Pearson BTEC Level 3 National Diploma in Forensic and Criminal Investigation
500/6720/5	Pearson BTEC Level 3 Extended Diploma in Applied Science (QCF)
601/3493/8	Pearson BTEC Level 3 Extended Diploma in Dental Technology
601/7437/7	Pearson BTEC Level 3 National Extended Diploma in Applied Science
603/0247/1	Pearson BTEC Level 3 National Extended Diploma in Forensic and Criminal Investigation
603/3041/7	Pearson BTEC Level 3 National Certificate in Applied Human Biology
603/3057/0	Pearson BTEC Level 3 National Certificate in Applied Psychology
603/3040/5	Pearson BTEC Level 3 National Extended Certificate in Applied Human Biology
603/3058/2	Pearson BTEC Level 3 National Extended Certificate in Applied Psychology
600/4796/3	Pearson BTEC Level 1/Level 2 First Award in Application of Science
600/4787/2	Pearson BTEC Level 1/Level 2 First Award in Principles of Applied Science
500/6671/7	Pearson BTEC Level 2 Diploma in Applied Science

Support for Blending Learning

1. Digital Textbooks and Revision Guides

We're providing **free 90-day access** for your centre to some of our digital learning resources which can be accessed in college or at home.

The following digital Textbook bundles are all available via our online ActiveLearn platform. ActiveLearn provides core textbooks, online homework and practical activities, as well as front-of-class teaching resources, planning and assessment materials. You can allocate as much or as little from the e-Textbooks as you wish to your learners to access wherever, whenever.

Digital textbook bundles:

- KS4 Vocational Qualifications
- KS5 Vocational Qualifications

Revision

- KS4 Revision Guides
- KS5 Revision Guides

If you would like to access these resources please request access here.

2. Online remote-delivery recordings for BTECs

- Introduction to online remote delivery
- Developing resources for online delivery
- Planning and teaching online
- Supporting students studying online

> Find out more

3. Digital Live Event and Recordings

Access recordings from our **Digital Live event: Enabling Education**

> Find out more

4. Get expert guidance from our community of online teaching and learning specialists

A range of free resources including blog articles and webinars to provide support, inspire ideas and enable you to channel your passions and expertise without feeling too overwhelmed. Browse articles and blog content and access via this link.

5. Paid-for Teaching Resources

Pearson Learning Hub

This platform has a range of courses available with content broken down into bitesize learning chunks. It supports blended and online learning via the use of videos, online quizzes and resources that your learner can access.

For some courses, flashcards and infographics break down information further into accessible amounts of information.

Learning programmes currently include:

- **Workplace Behaviours** – soft skills training and development covering areas such as Resilience, Professionalism, Decision-making, Adaptability, Self-Management and Work Ethics.
- **Digital Technologies for non-experts** including Artificial Intelligence for Leaders, Artificial Intelligence De-Mystified and Digital Technology De-Mystified.

>Find out more about Pearson Learning Hub

ActiveLearn teaching packs

These packs cover the full breadth of the unit content. Lesson plans, presentations, activity sheets, videos and quizzes are included in the pack. Once you have access to these, you can share them with your learners.

Active Learn teaching packs are available for:

- **BTEC Nationals in Applied Science**
- **BTEC Nationals in Applied Psychology**

6. Sector Body Resources

Sector body	Web page
Royal Society of Biology	**www.rsb.org.uk/**
Royal Society of Chemistry	**www.rsc.org/**
Institute of Physics	**www.iop.org/**
Royal Horticultural Society	**www.rhs.org.uk**
British Ecological Society	**www.britishecologicalsociety.org/**
Biochemical Society	**www.biochemistry.org/**
Microbiology Society	**microbiologysociety.org/**
Association of the British Pharmaceutical Industry	**https://abpi.org.uk/**
STEM Learning	**www.stem.org.uk/**
Periodic Table Videos	**www.periodicvideos.com/index.htm**
Teach the Earth Geoscience	**https://serc.carleton.edu/teachearth/index.html**

Stellarium planetarium	**http://stellarium.org/**
NASA STEM Resources	**www.nasa.gov/education/materials/**
Learn Genetics (much more than genetics)	**https://learn.genetics.utah.edu/**
Concord Consortium (lots of on-line software applications for teaching science)	**https://concord.org/resources/**
Chem Collective online resources	**www.chemcollective.org/**
Scitable from Nature	**www.nature.com/scitable/**
BBC Teach	**https://www.bbc.co.uk/teach/gcse-national-5-biology/zdxyd6f**

Subject Advisor support and guidance

Subject Advisor: Irine Muhiuddin

Contact details:
https://support.pearson.com/uk/s/qualification-contactus

Keep an eye on the Science page and community page for the latest news and events to help you with delivering BTEC Nationals in Applied Science, Forensic and Criminal Investigation, Applied Human Biology and Applied Psychology qualifications. Over the next few weeks, look out for support addressing common FAQs to help you with this period of school closure. You can sign-up to Subject Advisor updates here

Teaching and Learning to support transition to second year of a two-year programme

We are continuing to support schools and colleges to enable learners to continue with their studies from home. We are encouraging continued learning so when learners return to school or college they have the knowledge and skills they need to continue with their course.

The information below are examples of the type of content that would have been covered in a typical in year 1 that is needed to support units/ components typically covered in the second year of a study programme

BTEC Nationals in Applied Science RQF

Unit 1 Principles of Applied Science

Learners on the first year of a two-year RQF Level 3 BTEC programme in Applied Science will not have been able to take the examination for Unit 1 Principles of Applied Science I, unless they took it in the January series. This is an important unit, containing material which underpins all the other units in the qualification. It will be important to ensure that the learners are conversant with the unit content even though this unit may not have to be formally assessed. For example, success in Unit 5 (Principles and Applications of Science II) and in Unit 7 (Contemporary Issues in Science) will require knowledge and understanding from Unit 1.

Unit 3 Science Investigation Skills

The other externally assessed unit which is usually taken in the first year is Unit 3 (Science Investigation Skills). This uses science content from Unit 1 to develop and assess important scientific skills, including developing a hypothesis and a plan to test the hypothesis, presenting results in table and graphs, interpreting results and evaluating an investigation. Learners will need these skills in Unit 6 (Investigative Project), in work for other units and when they progress to HE. They should therefore be given the opportunity to develop these through remote activities. The learners do not need to carry out an investigation to develop these

skills, it would be possible to use given data and other information including, for example, from past papers available on the BTEC website.

The other two externally-assessed units (Unit 5 Principles and Applications of Science II and Unit 7 Contemporary Issues in Science) are usually taken in the second year of a two-year programme. These do not require the completion of practical work for assessment so they could be delivered remotely. Their delivery could be started this Spring.

Unit 5 Principles and Applications of Science II and **Unit 7 Contemporary Issues in Science**

In Unit 7 learners generally take some time to develop the skills and understanding which results in a good performance in the external assessment so it would be wise to start work on this now. The learners could read scientific articles from different types of publication. This reading can be structured by providing work sheets containing questions and asking the learners to produce summaries. The learners should also start to develop the ability to consider how different organisations influence science and how to interpret qualitative and quantitative information. A common weakness in learner work for Unit 7 and for other units is proposing how to extend an investigation on a rational basis. Learners usually propose how to extend the study but they do not explain the rationale for their proposals. This can be practiced at this time and would have value in several units. The past papers for Unit 7 could also be used this Spring and Autumn but it may be better to reserve these for practice as the learners approach the date of their external assessment.

Command words

The distance learning approach being used at the present time is also an opportunity to practice providing evidence that meets the Command Words in assessment criteria and in external assessment. Lead Examiners and Standards Verifiers frequently report that learners have not addressed these requirements in answers to exam questions and in course work. Bringing forward to this Spring material and exercises from units normally delivered in the second year will also provide space in the second year for the development and assessment of practical skills that was not possible at present (for example in Units 2 and 4).

BTEC Nationals in Applied Science (QCF)

There are no externally assessed units in this qualification and so no need to prepare learners for external assessment on specific dates. Most centres use Unit 1 (Fundamentals of Science) at the beginning of their programme, after that there is variation between centres in the timing of each unit. Unit 1 does provide an important foundation for the other units in the qualification and if it has not been possible to complete the delivery of all the content this should be seen as a priority.

Several units do require the completion of practical work, including mandatory Units 1, 3 and 4. The practical skills in these units are important for other units and the learners should have the chance to complete the laboratory work. This may need to be undertaken in the Autumn of 2020 or later. Space in the timetable can be created by bringing forward content from second year units which does not require practical work. For example, Unit 5 (Perceptions of Science) and Unit 6 (Using Mathematical Tools in Science) do not require practical work and could be delivered remotely during the Spring of 2020.

Teachers are no doubt developing structured packages for the delivery of unit content. As with the RQF version, there would be value in using the activities also to develop the learners' understanding of the requirements of the Command Verbs in the assessment criteria.

BTEC Nationals in Applied Human Biology (RQF)

Learners on the first year of a two-year RQF Level 3 BTEC programme in Applied Human Biology will not have been able to take the examination for Unit 1 Principles of Applied Human Biology, unless they took it in the January series. While learners will not be sitting the external assessment in June 2020, it is important they are familiar with the content and requirements of Unit 1, as it underpins all other units in this qualification. For example, Unit 5 Diseases, Disorders, Treatments and Therapies, builds on the knowledge of biological

molecules from Unit 1: Principles of Applied Human Biology to give an understanding of how the molecules affect human health.

Learners going into the second year of a two-year RQF Level 3 BTEC programme in Applied Human Biology will be sitting the external assessment for Unit 3 Human Biology and Health in the next academic year. This unit builds on both Unit 1 Principles of Applied Human Biology and Unit 2 Practical Microbiology and Infectious Disease and explores the impact of health issues, initiatives and scientific research and reporting of health information. Teachers could bring forward the Unit 3 content using centre sourced health related articles, and ask learners to interpret, analyse and evaluate the scientific information provided. Learners could be asked to identify the impact of the health issue and the influence of different organisations/ individuals, the factors that affect the reliability of scientific reporting, the validity of information and identify potential areas for further development and/or research.

While learners may not be able to complete the lab-based assessment for Unit 2 Practical Microbiology and Infectious Disease Learning Aim C, it is possible that they could be accessing teaching and learning materials for the rest of the unit. Some of the content for Unit 3 Human Biology and Health could also be brought forward to the summer term of 2020. For example, the following topics could be covered in remote or distance learning lessons: classification and nature of microorganisms, transmission and treatments of infectious diseases, health issues, initiatives and influencers, as well as scientific reporting of findings.
This will give learners a good foundation on which to build their practical assessment in a lab at the next available opportunity, while ensuring they continue to build the knowledge and skills required to support their continued progress on their learning journey.

BTEC Nationals in Applied Psychology (RQF)

Learners on the first year of a two-year RQF Level 3 BTEC programme in Applied Psychology may not have been able to take the examination for Unit 1 Psychological Approaches and Applications, unless they took it in the January series. While learners will not be sitting the external assessment in 2020, it is

important they are familiar with the content and requirements of Unit 1, as it underpins all other units in this qualification. For example, Unit 4 Criminal and Forensic Psychology builds on the knowledge of key psychological concepts and approaches from Unit 1: Psychological Approaches and Applications through the direct application of these theories and ideas to explore explanations for criminality.

Learners going into the second year of a two-year RQF Level 3 BTEC programme in Applied Psychology will be able to sit the external assessment for Unit 3 Health Psychology in the next academic year. This unit builds on both Unit 1 Psychological Approaches and Applications and Unit 2 Conducting Psychological Research and explores explanations from different perspectives for health behaviours, including what motivates healthy and unhealthy behaviours, and what factors might influence behaviour changes. Learners can then apply these to stress and addiction.

Learners could be accessing teaching and learning materials from unit 1 so they have a good understanding of the different perspectives within psychology and an understanding of how they could be applied to specific health related behaviours. They could also access some of the teaching materials from unit 2 so they have an understanding of the different methods of research and can develop skills of analysis related to research design. This will support them with unit 3 and also with the chosen optional unit. Unit 4 focuses on aggression as well as social learning theory and operant conditioning relating to criminal and forensic psychology. Unit 5 child: Promoting Children's psychological development requires an understanding of different perspectives of child development particularly behavioural theories and cognitive development. Unit 6 : Introduction to Psychopathology explores different approaches to defining psychopathology and approaches to treatment which include behaviour therapies, cognitive therapies and the use of medication. Unit 7: Applied Sport Psychology requires an understanding of key psychological theories and includes Bandura from unit 1 as well as building on cognitive approaches.

Approaches for remote learning

Our expectation is that centres will continue to provide teaching and learning of as much of the BTEC specification unit content as is possible and carry out teacher based assessments (e.g. worksheets, questions, activities etc) to help prepare learners for the next stage of their journey.

We do not expect learners to complete any formal BTEC Assignment Briefs for BTEC Level 3 Nationals, BTEC Level 1 and 2 Firsts and Tech Awards between mid-March and July.
The table provides some examples of adapted approaches to providing learners with activities that allow for feedback and support continued teaching and learning.

Alternative Remote Learning Approaches	
Assessment Technique	**Indicative Alternative Assessment**
Case study (physical submission)	Case study (online submission or electronic submission by email)
Discussion forum (in class, verbal)	Virtual meetings (Google class, Microsoft Teams, Zoom, FaceTime, Skype or equivalent platforms)
Discussion forum (written)	Online chat (Google class, Microsoft Teams, Zoom, FaceTime, Skype, VLEs, blogs or equivalent platforms)

Experiment (lab based; face-to-face)	Report on results of the experiment provided by the tutor
Independent research report (physical copy)	Independent research report (online submission or electronic submission by email)
Question and Answer Session	(Google class, Microsoft Teams, Zoom, Skype or equivalent platforms)
Peer review (written, in class)	Peer review report (online submission or electronic submission by email)
Presentation (face-to-face, in class)	Presentation (live via Google class, Microsoft Teams, Zoom,Skype or equivalent platforms Presentation (recorded online submission or electronic submission by email)
Self-reflection	Self-reflection (online submission or electronic submission by email)
Simulated activity (in class demonstration)	Individual report (online submission or electronic submission by email)
Written task/report (physical submission)	Written task/report (online submission or electronic submission by email)

How to approach research

Students working on research activities requiring primary research may find it challenging in the current climate. However, when used correctly the internet can be a good source for scholarly journals (e.g. Google Scholar and Pubmed), current news, books, credible magazines, general information and other relevant content to help with research-based activities.

Secondary Data Collection

Where primary data collection may not be possible, or necessary, students may be directed to use secondary research; which can support the original hypothesis being examined. Many online journals offer free access to scholarly articles and peer reviewed journals. To ensure reliability look for reputable sources online. Many reliable statistics, articles and other information can be found on government and educational websites.

In addition, an Internet search for only scholarly information will reveal further sources. Some open access journals which feature topics across several areas are:

- **DOAJ** - https://doaj.org/

  DOAJ features more than 8,500 open access journals, many of which are sourced from government, commercial, non-profit, and for-profit sources.

- **Oxford Open** - https://academic.oup.com/journals/pages/open_access

  Oxford Open's database is comprised of archived content from more than 300 publications. The majority of these journals are fully open access, and the site also provides an array of optional open access entries (articles with publication costs paid by the author) that users may also access free-of-charge.

- **Omics Group -** https://www.omicsonline.org/open-access-journals-list.php

More than 300 open-access scientific journals on life sciences, pharmacology, environmental science, management, computer science and engineering.

For a full list of open access journals by subject go to-
https://www.onlineschools.org/open-access-journals/

Many professional bodies and professional membership organisations also publish research studies, case studies and information that students may use to support their research. Typically, these sources will be reliable and relevant. Centres are encouraged to ensure that students are aware of the professional bodies and membership organisations that are relevant to their field of study.

How to approach the use of software

Centres are encouraged to provide students with guidance as to suitable free or low-cost software that may be used to undertake work. For example:

There are many free or low-cost alternatives available. Many software vendors provide free versions of software for students. Searching on the internet will result in extensive lists.

Some large, industry-standard software vendors provide free versions of their software for education. Some of the most common are:

- **Microsoft** – Word, Excel, Powerpoint and others are available for free. (https://www.microsoft.com/en-us/education/products/office)
- **Libre Office** - LibreOffice is free and Open Source Office Suite Software. https://www.libreoffice.org/
- **Google Docs** - free office suite for personal use. https://www.google.co.uk/docs/about/

In addition, many vendors offer low-cost educational licenses for their software. For example, Adobe Creative Cloud (Photoshop, Illustrator, InDesign, etc.) offer a low-cost monthly license for students. (https://adobe.ly/3430FXX)

Finally, many vendors offer fully functional trial versions of their software. These may allow students to complete work using the same software as found in college. Centres are encouraged to explore whether trial versions of their software may be available and provide students with appropriate guidance.