

	<b>Curriculum Checkpoints: What do students know and what can they do?</b>			Possible resources	Further guidance
Summative Comment	Developing (P)	Securing (M)	Mastering (D)		
<b>Unit 3</b>	Learners will demonstrate a sound knowledge and understanding of scientific concepts, procedures, processes and techniques and their application within a practical context. Learners will interpret and analyse their own data and secondary data, leading to reasoned judgements on the qualitative and quantitative data they have collected during their investigation. They will be able to draw links between different scientific concepts, procedures, processes and techniques to make a hypothesis and plan an investigation. Learners will be able to make evaluative judgements on scientific data, processes and procedures that make reference to scientific reasoning.	Learners will demonstrate a good understanding of scientific concepts, procedures, processes and techniques and their application within a practical context. They will interpret, analyse and evaluate their own collected data and secondary data to support judgements and conclusions drawn. They will be able to draw links between different scientific concepts, procedures, processes and techniques to make a hypothesis and plan an investigation. Learners will be able to provide rationalised evaluative judgements on scientific data, processes and procedures that are fully supported by scientific reasoning.	Learners will demonstrate a thorough understanding of how scientific concepts, procedures, processes and techniques can be integrated and applied within a practical context. They will interpret, analyse and evaluate their own collected data and secondary data to support judgements and conclusions drawn. Learners will use and integrate knowledge and understanding of scientific concepts, procedures, processes and techniques to make a hypothesis and plan an investigation that is fully supported by scientific reasoning. Learners will be able to provide rationalised evaluative judgements on scientific data, processes and procedures that are fully supported by scientific reasoning.		
<b>General Skills</b>	Learners must be able to planning a scientific investigation, i.e. developing an hypothesis or a null hypothesis based on relevant scientific ideas. Select appropriate equipment, techniques and standard procedures. Select and justify the use of equipment/techniques/standard procedures for quantitative and/or qualitative investigations. Understand risks and hazards associated with the investigation. Identify Variables in the investigation, i.e. independent, dependent and control. Be able to produce a clear, logically ordered method to obtain results. Select relevant measurements and the range of measurements to be recorded. Explain the importance of obtaining data accurately/reliably and to appropriate level of precision. Explain how variables can be controlled/measured/monitored. Understand how the data/information can be analysed.	Learners must be able to collect data accurately/reliably and to appropriate levels of precision; tabulate data in a clear and logical format using correct headings with units; be able to identify anomalous data and take appropriate action; be able to recognise when it is appropriate to take repeats; be able to make qualitative observations and draw inferences. Learners must be able to carry out relevant calculations where appropriate, involving: mean and standard deviation; use and interpretation of error bars; use of statistical tests, including t-test, chi-squared and correlation analysis; use of formulae; transposition of formulae; conversion of units; use of standard form; percentage error of measuring equipment. Display data in an appropriate format, including choosing an appropriate graph/chart/tables; correct plotting/labelling/scales.	Learners must be able to identify trends/patterns in data; compare primary and secondary data; use data to draw conclusions that are valid and relevant to the purpose of the investigation. Interpret statistical tests using tables of critical values and a 5% significance level, with reference to the null hypothesis. Learners must be able to make any recommendations for improvements to the investigation; explain anomalous data; be able to determine quantitative and discuss qualitative sources of error; be able to discuss evidence of the reliability of the data collected during the investigation; identify strengths and weaknesses within method/techniques/standard procedures/equipment used. Be able to suggest improvements to an investigation.		<a href="https://www.pearson.com/content/dam/pdf/BTEC-Nationals/Applied-Science/2016/specification-and-sample-assessments/BTEC-L3-Nat-ExtDip-in-Applied-Science-Spec.pdf">chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://qualifications.pearson.com/content/dam/pdf/BTEC-Nationals/Applied-Science/2016/specification-and-sample-assessments/BTEC-L3-Nat-ExtDip-in-Applied-Science-Spec.pdf</a>
<b>Biology</b>	Learners must be able to state the factors that can affect plant growth and/or distribution including: Human effects – trampling. Soil pH and aeration. Light intensity – shaded and unshaded areas. Temperature. Presence of water – moisture and rainfall. Mineral ions. Learners must be able to describe the structure of a protein, including: peptide linkage, active sites, denaturation. Learners must be able to state the factors affecting the rate of diffusion, including: concentration gradient, shape and size of molecule, temperature, distance, surface area.	Learners must be able to explain the importance of random sampling in collecting reliable and valid data for analysis. Learners must be able to explain the roles of enzymes as biological catalysts in chemical reactions, referring to: collision theory, formation of enzyme-substrate complex, specificity of enzymes brought about by the need for matching of substrate and active site, lowering of activation energy, changing substrate concentration changes the rate at which substrate molecules will join active sites, and the importance of measuring initial rates of reaction. Learners must be able to describe the random movement of molecules in liquids and gases and that diffusion takes place along a concentration gradient until dynamic equilibrium is reached.	Learners must be able to select appropriate ecological sampling techniques to investigate the effect of abiotic factors on plant populations, including: transects, quadrats (open and gridded) and point frames. Learners must be able to select sample sizes for investigation with regards to practical constraints and the need to collect sufficient data to make valid conclusions. Learners must be able to describe the factors that can affect enzyme activity, including temperature, pH, substrate and enzyme concentration.	A level textbooks and websites would be useful here	
<b>Chemistry</b>	Learners must be able state the definition of a fuel and a variety of different examples including: petrol, paraffin, food, cooking oil, methanol, ethanol, propan-1-ol, butan-1-ol, pentan-1-ol, wax. Learners must be able to state the hazards associated with fuels including the flammability, toxicity, risk of explosion, harmful effects of products of incomplete combustion, and pollution from sulphur impurities of the fuels mentioned in this unit.	Learners must be able to define – joules, kJ, calories (1 g by 1 oC), kilocalories, kWh, and calculate heat energy supplied by a fuel to water using: heat energy = mass of water × specific heat capacity of water × temperature rise of water.	Learners must be able to calculate heat energy released from a fuel in kJ mol <sup>-1</sup> .		
<b>Physics</b>	Learners must be able to use of electrical symbols to design circuits, including: battery, ammeter, voltmeter, bulbs, resistor and diodes.	Learners must be able to apply the formulae for Power: Power = VI (voltage × current). Power = work done/time. Learners must be able to calculate work done using: work done = energy supplied or transformed. Consider different domestic appliances to calculate energy usage and relate fuse size to power.	Learners must be able to consider different domestic appliances to calculate energy usage and relate fuse size to power.		

	<b>Curriculum Checkpoints: What do students know and what can they do?</b>			<b>Possible resources</b>	<b>Further guidance</b>
<b>Summative Comment</b>	<b>Developing (P)</b>	<b>Securing (M)</b>	<b>Mastering (D)</b>		
<b>Learning Aim A: Understand electrical symbols, units, definitions, relationships and properties of circuit components for use in the construction of circuits</b>	<b>A.P1</b> Can explain principle electrical terms, quantities and relationships for given situations.	<b>A.M1</b> Can demonstrate, by calculation, the use of principle electrical terms, quantities and relationships for given situations.	<b>A.D1 and B.D1</b> Can evaluate, by calculation and graphical representation, the operation of a range of circuit assemblies using measured values.	<p><a href="http://www.lectures4you.de/pdf/chris_prot/Ohmlaw.pdf">http://www.lectures4you.de/pdf/chris_prot/Ohmlaw.pdf</a>  <a href="http://www.phy.olemiss.edu/~thomas/weblab/215_lab_items/20_215_p roce_Series_Spr2006.pdf">http://www.phy.olemiss.edu/~thomas/weblab/215_lab_items/20_215_p roce_Series_Spr2006.pdf</a>  <a href="http://www.allaboutcircuits.com/textbook/direct-current/chpt-6/voltage-divider-circuits/">http://www.allaboutcircuits.com/textbook/direct-current/chpt-6/voltage-divider-circuits/</a>  <a href="https://science.iit.edu/sites/science/files/elements/phy/pdfs/Lab-4-Capacitors-F14.pdf">https://science.iit.edu/sites/science/files/elements/phy/pdfs/Lab-4-Capacitors-F14.pdf</a>  <a href="http://hyperphysics.phy-astr.gsu.edu/hbase/electric/capac.html#c2">http://hyperphysics.phy-astr.gsu.edu/hbase/electric/capac.html#c2</a></p>	<p><a href="chrome-extension://efaidnbmnnnibpcajpcgclbfindmkaj/https://qualifications.pearson.com/content/dam/pdf/BTEC-Nationals/Applied-Science/2016/specification-and-sample-assessments/BTEC-L3-Nat-ExtDip-in-Applied-Science-Spec.pdf">chrome-extension://efaidnbmnnnibpcajpcgclbfindmkaj/https://qualifications.pearson.com/content/dam/pdf/BTEC-Nationals/Applied-Science/2016/specification-and-sample-assessments/BTEC-L3-Nat-ExtDip-in-Applied-Science-Spec.pdf</a>                      and Pearson Applied Science Student book 1</p>
<b>Learning Aim B: Construct series and parallel circuits for use in standard electrical applications and measure electrical values</b>	<b>B.P2</b> Can accurately construct a range of circuits and record appropriate values accurately using suitable measurement devices.	<b>B.M2</b> Can compare predicted and calculated fundamental electrical values for a range of circuit assemblies.		<p><a href="http://www.lectures4you.de/pdf/chris_prot/Ohmlaw.pdf">http://www.lectures4you.de/pdf/chris_prot/Ohmlaw.pdf</a>  <a href="http://www.phy.olemiss.edu/~thomas/weblab/215_lab_items/20_215_p roce_Series_Spr2006.pdf">http://www.phy.olemiss.edu/~thomas/weblab/215_lab_items/20_215_p roce_Series_Spr2006.pdf</a>  <a href="http://www.allaboutcircuits.com/textbook/direct-current/chpt-6/voltage-divider-circuits/">http://www.allaboutcircuits.com/textbook/direct-current/chpt-6/voltage-divider-circuits/</a>  <a href="https://science.iit.edu/sites/science/files/elements/phy/pdfs/Lab-4-Capacitors-F14.pdf">https://science.iit.edu/sites/science/files/elements/phy/pdfs/Lab-4-Capacitors-F14.pdf</a>  <a href="http://hyperphysics.phy-astr.gsu.edu/hbase/electric/capac.html#c2">http://hyperphysics.phy-astr.gsu.edu/hbase/electric/capac.html#c2</a></p>	
<b>Learning Aim C: Examine AC and DC production and health and safety aspects in domestic and industrial applications</b>	<b>C.P3</b> Can explain the similarities and differences of AC and DC electrical circuits. <b>C.P4</b> Can explain the dangers of working with electricity and its effects on human physiology.	<b>C.M3</b> Can compare RMS and peak values of AC electricity. <b>C.M4</b> Can compare discuss the procedures and practices used to minimise risk when working with electricity.	<b>C.D2</b> Can evaluate the principles of AC production and transmission for safe use in suitable applications.	<p><a href="http://www.hse.gov.uk/pUbns/priced/hsr25.pdf">http://www.hse.gov.uk/pUbns/priced/hsr25.pdf</a>  <a href="http://www.inbrief.co.uk/employees/electricity-at-work/">http://www.inbrief.co.uk/employees/electricity-at-work/</a>  <a href="https://van.physics.illinois.edu/qa/listing.php?id=6793">https://van.physics.illinois.edu/qa/listing.php?id=6793</a>  <a href="http://physicsnet.co.uk/a-level-physics-as-a2/current-electricity/alternating-current-ac/">http://physicsnet.co.uk/a-level-physics-as-a2/current-electricity/alternating-current-ac/</a>  <a href="http://www.electricleasy.com/2012/12/basic-construction-and-working-of-dc.html">http://www.electricleasy.com/2012/12/basic-construction-and-working-of-dc.html</a>  <a href="http://www.riotinto.com/aluminium-83.aspx#united%20kingdom">http://www.riotinto.com/aluminium-83.aspx#united%20kingdom</a>  <a href="http://www.practicalphysics.org/explaining-rms-voltage-and-current.html">http://www.practicalphysics.org/explaining-rms-voltage-and-current.html</a>  <a href="http://www.homepower.com/articles/microhydro-power/design-installation/electric-side-hydro-power">http://www.homepower.com/articles/microhydro-power/design-installation/electric-side-hydro-power</a></p>	
<b>Learning Aim D: Examine the uses of transducers, sensors and other measurement devices</b>	<b>D.P5</b> Describe the basic principles of operation of transducers, sensors and electrical measurement devices.	<b>D.M5</b> Can demonstrate the correct basic principles and uses of transducers, sensors and electrical measurement devices in practical situations.	<b>D.D3</b> Can evaluate the use of transducers, sensors and measurement devices in practical situations in terms of their fitness for purpose.	<p><a href="http://www.calpoly.edu/~gthorncr/ME236/documents/Exp2.pdf">http://www.calpoly.edu/~gthorncr/ME236/documents/Exp2.pdf</a>  <a href="http://www.globalspec.com/learnmore/optics_optical_components/optoelectronics/lux_meters_light_meters">http://www.globalspec.com/learnmore/optics_optical_components/optoelectronics/lux_meters_light_meters</a></p>	

BTEC Unit 9: Human Regulation and Reproduction

	<b>Curriculum Checkpoints: What do students know and what can they do?</b>			<i>Possible resources</i>	Further guidance
Summative Comment	<b>Developing (P)</b>	<b>Securing (M)</b>	<b>Mastering (D)</b>		
<b>Learning Aim A: Understand the interrelationship and nervous control of the cardiovascular and respiratory systems</b>	A.P1 Can describe the organisation and function of the nervous system in relation to cardiovascular and respiratory requirements	A.M1 Can explain how nervous impulses are initiated, transmitted and coordinated in the control of the cardiovascular and respiratory systems.	A.D1 Can assess the role of the nervous system in coordinating the cardiovascular and respiratory systems	<p><a href="http://www.cliffsnotes.com/study-guides/anatomy-and-physiology/the-respiratory-system/control-of-respiration">http://www.cliffsnotes.com/study-guides/anatomy-and-physiology/the-respiratory-system/control-of-respiration</a>  <a href="http://health.howstuffworks.com/human-body/systems/respiratory/lung3.htm">http://health.howstuffworks.com/human-body/systems/respiratory/lung3.htm</a>  <a href="http://www.livescience.com/22665-nervous-system.html">http://www.livescience.com/22665-nervous-system.html</a>  <a href="http://www.cliffsnotes.com/study-guides/anatomy-and-physiology/nervous-tissue/transmission-of-nerve-impulses">http://www.cliffsnotes.com/study-guides/anatomy-and-physiology/nervous-tissue/transmission-of-nerve-impulses</a>  <a href="http://www.medbullets.com/step1-cardiovascular/8022/baroreceptors-and-chemoreceptors">http://www.medbullets.com/step1-cardiovascular/8022/baroreceptors-and-chemoreceptors</a>  <a href="https://www.boundless.com/physiology/textbooks/boundless-anatomy-and-physiology-textbook/the-central-nervous-system-cns-12/parts-of-the-brain-stem-117/functions-of-the-brain-stem-637-6728/">https://www.boundless.com/physiology/textbooks/boundless-anatomy-and-physiology-textbook/the-central-nervous-system-cns-12/parts-of-the-brain-stem-117/functions-of-the-brain-stem-637-6728/</a></p>	<p><a href="chrome-extension://efaidnbmnnibpcajpcglcl.efindmkaj/https://qualifications.pearson.com/content/dam/pdf/BTEC-Nationals/Applied-Science/2016/specification-and-sample-assessments/BTEC-L3-Nat-ExtDip-in-Applied-Science-Spec.pdf">chrome-extension://efaidnbmnnibpcajpcglcl.efindmkaj/https://qualifications.pearson.com/content/dam/pdf/BTEC-Nationals/Applied-Science/2016/specification-and-sample-assessments/BTEC-L3-Nat-ExtDip-in-Applied-Science-Spec.pdf</a> and Pearson Applied Science Student book 1</p>
<b>Learning Aim B: Understand the homeostatic mechanisms used by the human body</b>	B.P2 Can describe how homeostatic mechanisms maintain normal function	B.M2 Can explain the role of hormones in homeostatic mechanisms	B.D2 Can analyse the impact of homeostatic dysfunction on the human body	<p><a href="http://www.livescience.com/26496-endocrine-system.html">http://www.livescience.com/26496-endocrine-system.html</a>  <a href="http://www.hormone.org/hormones-and-health/the-endocrine-system">http://www.hormone.org/hormones-and-health/the-endocrine-system</a>  <a href="http://www.pbslearningmedia.org/resource/tdc02.sci.life.reg.bodycontrol/body-control-center/">http://www.pbslearningmedia.org/resource/tdc02.sci.life.reg.bodycontrol/body-control-center/</a>  <a href="http://ats.doit.wisc.edu/biology/ap/ho/t1_a1.htm">http://ats.doit.wisc.edu/biology/ap/ho/t1_a1.htm</a>  <a href="http://www.abpschools.org.uk/page/modules/homeostasis_kidneys/kidneys6.cfm?coSiteNavigation_allTopic=1">http://www.abpschools.org.uk/page/modules/homeostasis_kidneys/kidneys6.cfm?coSiteNavigation_allTopic=1</a></p>	
<b>Learning Aim C: Understand the role of hormones in the regulation and control of the reproductive system</b>	<p>CP3. Can describe the structure and function of reproductive anatomy</p> <p>C.P4 Can describe how hormones are involved in gamete development and conception</p>	C.M3 Can explain how the regulation of male and female reproductive systems can affect human reproductive health	C.D3 Can evaluate how conception may be prevented and promoted	<p><a href="http://www.fpa.org.uk/help-and-advice/contraception-help?gclid=CjwKEAIA_C1BRDQyIQO8_Tq230SIABWBSxnpCfCkipMB_ZV4RyJS2ykOr8uzjRMB7uh1UAMrRJRocCHHw_wcB">http://www.fpa.org.uk/help-and-advice/contraception-help?gclid=CjwKEAIA_C1BRDQyIQO8_Tq230SIABWBSxnpCfCkipMB_ZV4RyJS2ykOr8uzjRMB7uh1UAMrRJRocCHHw_wcB</a></p> <p><a href="http://thetureclinic.com/services/male-fertility-infertility-doctor-treatments-issues-zero-sperm-count-male-doctors/spermatogenesis-production/">http://thetureclinic.com/services/male-fertility-infertility-doctor-treatments-issues-zero-sperm-count-male-doctors/spermatogenesis-production/</a></p>	

BTEC Unit 8: Physiology of Human Body Systems

	<b>Curriculum Checkpoints: What do students know and what can they do?</b>			<i>Possible resources</i>	Further guidance
Summative Comment	<b>Developing (P)</b>	<b>Securing (M)</b>	<b>Mastering (D)</b>		
<b>Learning Aim A: Understand the impact of disorders of the musculoskeletal system and their associated corrective treatments</b>	A.P1 Can explain the functional role of the musculoskeletal system in the human body. A.P2 Can describe the effect of disorder of muscles and joints and possible corrective treatment(s).	A.M1 Is able to compare how disorders of the musculoskeletal system can affect how muscles bring about movement of joints and the importance of corrective treatment. synthesis.	A.D1 Can evaluate the effect of corrective treatment(s) associated with a musculoskeletal disorder	<a href="http://www.bbc.co.uk/science/humanbody/body/index_interactivebody.shtml">http://www.bbc.co.uk/science/humanbody/body/index_interactivebody.shtml</a>	<a href="http://www.bbc.co.uk/science/humanbody/body/index_interactivebody.shtml">chrome-extension://efaidnbmnnnibpcajpcglcfefindmkaj/https://qualifications.pearson.com/content/dam/pdf/BTEC-Nationals/Applied-Science/2016/specification-and-sample-assessments/BTEC-L3-Nat-ExtDip-in-Applied-Science-Spec.pdf</a> and Pearson Applied Science Student book 1
<b>Learning Aim B: Understand the impact of disorder on the physiology of the lymphatic system and the associated corrective treatment.</b>	B.P3 Can describe the gross anatomy and function of the organs of the lymphatic system. B.P4 Can describe the effect of disorder on the lymphatic system and possible corrective treatment(s).	B.M2 Can explain the physiological reasoning for corrective treatment(s) associated with the disorder of the lymphatic system.	B.D2 Is able to evaluate the effect of corrective treatment(s) for a disorder of the lymphatic system.	<a href="http://www.innerbody.com/image/lympov.html">http://www.innerbody.com/image/lympov.html</a> <a href="http://www.livescience.com/26983-lymphatic-system.html">http://www.livescience.com/26983-lymphatic-system.html</a> <a href="http://www.cancerresearchuk.org/about-cancer/coping-with-cancer/coping-physically/lymphoedema/what-is-lymphoedema">http://www.cancerresearchuk.org/about-cancer/coping-with-cancer/coping-physically/lymphoedema/what-is-lymphoedema</a> Ross and Wilson Anatomy and Physiology in Health and Illness - by Anne Waugh BSc(Hons) MSc CertEd SRN RNT FHEA (Author), Allison Grant BSc PhD RGN (Author)	
<b>Learning Aim C: Explore the physiology of the digestive system and the use of corrective treatments for dietary related diseases.</b>	CP5. Can explain the role and location of organs involved in digestion. C.P6 Can correctly carry out investigations to establish sources and importance of key nutrients for a balanced diet. C.P7 Can describe the symptoms of nutrient deficiency as a result of dietary-related disease	C.M3 Can analyse the role of digestive enzymes on nutrient uptake in each part of the digestive system. C.M4 Can explain the use of corrective treatment(s) for nutrient deficiency.	C.D3 Can evaluate the effect of dietary disease and corrective treatment(s) on human health.	<a href="http://www.nhs.uk/conditions/vitamins-minerals/pages/vitamins-minerals.aspx">http://www.nhs.uk/conditions/vitamins-minerals/pages/vitamins-minerals.aspx</a> <a href="http://www.nhs.uk/Conditions/Malnutrition/Pages/introduction.aspx">http://www.nhs.uk/Conditions/Malnutrition/Pages/introduction.aspx</a> <a href="http://science.nationalgeographic.com/science/health-and-human-body/human-body/digestive-system-article/">http://science.nationalgeographic.com/science/health-and-human-body/human-body/digestive-system-article/</a> <a href="http://www.innerbody.com/image/digeov.html">http://www.innerbody.com/image/digeov.html</a>	

BTEC Unit 6: Investigative Project

Summative Comment	Curriculum Checkpoints: What do students know and what can they do?			Possible resources	Further guidance
	Developing (P)	Securing (M)	Mastering (D)		
Learning Aim A: Undertake a literature search and review to produce an investigative project proposal	<p><b>A.P1</b> Can carry out a literature search and review into a chosen scientific area.</p> <p><b>A.P2</b> Can produce an appropriate project proposal for an investigative project proposal, to include hypothesis.</p>	<p><b>A.M1</b> Can analyse a literature search and discuss its relevance to inform the investigative project proposal.</p> <p><b>A.M2</b> Can produce a project proposal for a scientific investigation, to include hypothesis and potential limitations.</p>	<p><b>A.D1</b> Can evaluate the different methods of investigation considered for the investigative project proposal, justifying the hypothesis chosen.</p>	<p>Level 3 Applied Science Text book Pearson  <a href="http://intobiology.org.uk/planning-an-investigation/">http://intobiology.org.uk/planning-an-investigation/</a>  <a href="http://www.rsc.org/learn-chemistry/resource/listing?searchtext=&amp;filter=all&amp;fSubject=SUB000C1220&amp;fLevel=LEV00000005">http://www.rsc.org/learn-chemistry/resource/listing?searchtext=&amp;filter=all&amp;fSubject=SUB000C1220&amp;fLevel=LEV00000005</a></p>	<p><a href="chrome-extension://efaidnbmnnnibpcajpcgcl/efindmkaj/https://qualifications.pearson.com/content/dam/pdf/BTEC-Nationals/Applied-Science/2016/specification-and-sample-assessments/BTEC-L3-Nat-ExtDip-in-Applied-Science-Spec.pdf">chrome-extension://efaidnbmnnnibpcajpcgcl/efindmkaj/https://qualifications.pearson.com/content/dam/pdf/BTEC-Nationals/Applied-Science/2016/specification-and-sample-assessments/BTEC-L3-Nat-ExtDip-in-Applied-Science-Spec.pdf</a>                      and Pearson Applied Science Student book 1</p>
Learning aim B: Produce a plan for an investigative project based on the proposal	<p><b>B.P3</b> Can produce a realistic working plan for the project, including health and safety and risk assessments.</p>	<p><b>B.M3</b> Can produce a realistic working plan for the project, including health and safety and risk assessments and contingency planning.</p>	<p><b>C.D2</b> Can analyse the effectiveness of the working plan, justifying changes made.</p>	<p>Level 3 Applied Science Text book Pearson  <a href="http://intobiology.org.uk/planning-an-investigation/">http://intobiology.org.uk/planning-an-investigation/</a>  <a href="http://www.rsc.org/learn-chemistry/resource/listing?searchtext=&amp;filter=all&amp;fSubject=SUB000C1220&amp;fLevel=LEV00000005">http://www.rsc.org/learn-chemistry/resource/listing?searchtext=&amp;filter=all&amp;fSubject=SUB000C1220&amp;fLevel=LEV00000005</a></p>	
Learning Aim C: Safely undertake the project, collecting, analysing and presenting the results	<p><b>C.P4</b> Can demonstrate practical skills to assemble relevant apparatus/equipment and materials, and carry out the project using safe working practices.</p> <p><b>C.P5</b> Can accurately collect, analyse and present the results obtained.</p>	<p><b>C.M4</b> Can justify the choice of experimental and data analysis techniques used as a means of increasing accuracy, reliability and validity.</p>	<p><b>C/D.D3</b> Can evaluate the conclusions of the investigative project and its practical aspects, discussing limitations, improvements and recommendations for further study.</p> <p><b>C/D.D4</b> Can evaluate the skills developed in the investigative project undertaken and suggest areas for improvement.</p>	<p>Level 3 Applied Science Text book Pearson  <a href="http://intobiology.org.uk/planning-an-investigation/">http://intobiology.org.uk/planning-an-investigation/</a>  <a href="http://www.rsc.org/learn-chemistry/resource/listing?searchtext=&amp;filter=all&amp;fSubject=SUB000C1220&amp;fLevel=LEV00000005">http://www.rsc.org/learn-chemistry/resource/listing?searchtext=&amp;filter=all&amp;fSubject=SUB000C1220&amp;fLevel=LEV00000005</a>  <a href="http://www.fao.org/docrep/x5307e/x5307e06.htm">http://www.fao.org/docrep/x5307e/x5307e06.htm</a></p>	
Learning Aim D: Review the investigative project using correct scientific principles	<p><b>D.P6</b> Can produce a report using findings, scientific terminology and protocol appropriately and drawing conclusions.</p> <p><b>D.P7</b> Can summarise skills developed in the investigative project undertaken.</p>	<p><b>D.M5</b> Can produce a report using findings, correct scientific terminology, protocol and formatting and drawing valid conclusions.</p> <p><b>D.M6</b> Can discuss the importance of skills developed in the investigative project undertaken to achieve aims.</p>	<p><b>C/D.D3</b> Can evaluate the conclusions of the investigative project and its practical aspects, discussing limitations, improvements and recommendations for further study.</p> <p><b>C/D.D4</b> Can evaluate the skills developed in the investigative project undertaken and suggest areas for improvement.</p>	<p>Level 3 Applied Science Text book Pearson  <a href="http://intobiology.org.uk/planning-an-investigation/">http://intobiology.org.uk/planning-an-investigation/</a>  <a href="http://www.rsc.org/learn-chemistry/resource/listing?searchtext=&amp;filter=all&amp;fSubject=SUB000C1220&amp;fLevel=LEV00000005">http://www.rsc.org/learn-chemistry/resource/listing?searchtext=&amp;filter=all&amp;fSubject=SUB000C1220&amp;fLevel=LEV00000005</a>  <a href="http://www.fao.org/docrep/x5307e/x5307e06.htm">http://www.fao.org/docrep/x5307e/x5307e06.htm</a></p>	

Summative Comment	Curriculum Checkpoints: What do students know and what can they do?			Possible resources	Further guidance
	Developing (P)	Securing (M)	Mastering (D)		
<b>Learning Aim A: Understand the importance of health and safety in scientific organisations</b>	<b>A.P1</b> Can explain how health and safety measures in a scientific organisation comply with legislation. <b>A.P2</b> Can describe the potential hazards relevant to different scientific working environments.	<b>A.M1</b> Can compare the health and safety measures taken in relation to legislation for different scientific working environments, referencing potential hazards.	<b>A.D1</b> Can evaluate the measures taken for different working environments to ensure high standards of health and safety that comply with legislation.	<a href="http://www.hse.gov.uk/">http://www.hse.gov.uk/</a> <a href="http://www.cleapss.org.uk/">http://www.cleapss.org.uk/</a> <a href="http://www.pfizer.com/responsibility/workplace_responsibility/health_and_safety">http://www.pfizer.com/responsibility/workplace_responsibility/health_and_safety</a>	<a href="chrome-extension://efaidnbnmnmbpcjpcglcfindmkaj/https://qualifications.pearson.com/content/dam/pdf/BTEC-Nationals/Applied-Science/2016/specification-and-sample-assessments/BTEC-L3-Nat-ExtDip-in-Applied-Science-Spec.pdf">chrome-extension://efaidnbnmnmbpcjpcglcfindmkaj/https://qualifications.pearson.com/content/dam/pdf/BTEC-Nationals/Applied-Science/2016/specification-and-sample-assessments/BTEC-L3-Nat-ExtDip-in-Applied-Science-Spec.pdf</a> and Pearson Applied Science Student book 1
<b>Learning aim B: Explore the manufacturing techniques and testing methods for an organic liquid</b>	<b>B.P3</b> Can correctly prepare and test the purity of an organic liquid and draw conclusions. <b>B.P4</b> Can describe the industrial manufacture and testing of an organic liquid.	<b>B.M2</b> Can demonstrate skilful application of techniques in preparing and testing the purity of an organic liquid and draw detailed conclusions. <b>B.M3</b> Can compare the laboratory and industrial manufacture and testing of an organic liquid.	<b>B.D2</b> Can analyse the factors affecting the yield and purity of an organic liquid in the laboratory and their relevance to its industrial manufacture.	<a href="https://edu.rsc.org/experiments/making-esters-from-alcohols-and-acids/1743.article">https://edu.rsc.org/experiments/making-esters-from-alcohols-and-acids/1743.article</a> <a href="https://www.youtube.com/watch?v=RRZrjgGms6o">https://www.youtube.com/watch?v=RRZrjgGms6o</a>	
<b>Learning aim C: Explore manufacturing techniques and testing methods for an organic solid</b>	<b>C.P5</b> Can correctly prepare and test the purity of an organic solids and draw conclusions. <b>C.P6</b> Can describe the industrial manufacture and testing of an organic solid.	<b>C.M4</b> Can demonstrate skilful application of techniques in preparing and testing the purity of an organic solid and draw detailed conclusions. <b>C.M5</b> Can compare the laboratory and industrial manufacture and testing of an organic solid.	<b>C.D3</b> Can analyse the factors affecting the yield and purity of an organic solid in the laboratory and their relevance to its industrial manufacture.	<a href="http://www.rsc.org/learn-chemistry/content/filerepository/CMP/00/000/045/Aspirin.pdf">http://www.rsc.org/learn-chemistry/content/filerepository/CMP/00/000/045/Aspirin.pdf</a> <a href="http://www.rsc.org/learn-chemistry/content/filerepository/CMP/00/000/047/Paracetamol_web.pdf">http://www.rsc.org/learn-chemistry/content/filerepository/CMP/00/000/047/Paracetamol_web.pdf</a>	
<b>D Understand how scientific information may be stored and communicated in a workplace laboratory</b>	<b>D.P7</b> Can explain how scientific information in a workplace laboratory is recorded and processed to meet the needs of the customer and to ensure traceability. <b>D.P8</b> Can explain how useful scientific information is obtained from large data sets and the potential issues and benefits.	<b>D.M6</b> Can analyse the differences in the storage and communication of scientific information in different workplace laboratories	<b>D.D4</b> Can evaluate the challenges to organisations in making available large volumes of scientific information.	Applied Science Level 3 BTEC NG Pearson	