

Sample Teaching Plan
Unit G620: Science at Work

Suggested teaching time

Plan is based on 12 weeks at 5 hours per week (4 hours contact time + 1 hour directed study)

The learning activities are suggestions only. Teachers may wish to develop alternative strategies. The plan should be read alongside the G620 Specification and, in particular, the Assessment Evidence Grid (attached for your reference).

Week number	Specification Unit Reference and Assessment Objectives	Suggested Learning Activities	Resources
1	3.1.2: Organisations Using Science – part of AO1(a)	<p>Introduction to research techniques: survey of one service organisation.</p> <p>Induction assignments.</p> <p>Research techniques: work on research methods and extraction of specific information.</p>	<p><i>Sample Assignment A:</i> Research techniques</p> <p>NHS resource pack www.nhs.uk/careers 0845 6060655</p>
2 (induction activities may need less time)	3.1.4: Practical techniques and Procedures	<p>Introduce practical assignments:</p> <p>Suggest possible induction activities – fit to basic assignment brief:</p> <ul style="list-style-type: none"> • microscopy work • volumetric tasks • analysis of unknowns • measurement of electrical resistance. <p>Induction work covers: practical techniques, risk assessments, work based on GCSE practical experience.</p> <p>(This could be completed after the survey assignment of preferred).</p>	<p><i>Sample Assignment D:</i> Vinegar Analysis</p> <p>GCSE practical work – adapted to a vocational context.</p> <p>This could be used and time extended if candidates are familiar with volumetric techniques.</p>

Week number	Specification Unit Reference and Assessment Objectives	Suggested Learning Activities	Resources
3 – 4	<p>Survey of four science based organisations - AO1(a)</p> <p><i>Include: 3.1.1: The importance of health and safety - AO1(c)</i></p>	<p>Suggest:</p> <ul style="list-style-type: none"> • one organised visit • candidates to visit local health club / healthcare services / supermarket • use internet facilities for research of two other organisations • use paper based/leaflets for other. <p>Candidates can work as a group for this activity but presentation/leaflet to be done individually.</p> <p>Candidates can link the work on health and safety here – they need to be aware of requirements.</p>	<p><i>Sample Assignment B:</i> Survey in the Work Place</p> <p>Range of resources - see Unit G620 Specification & Sample Assignments</p>
5 – 8	<p>3.1.4: Practical techniques and procedures - AO3</p> <p>3.1.1: The importance of health and safety (Risk assessments for practical work)</p> <p>Calculations - AO2(b)</p>	<p>Either:</p> <ul style="list-style-type: none"> • both practical tasks can be completed here <p>or</p> <ul style="list-style-type: none"> • complete one in week 5 – 6 and a further one after the study of one organisation. <p>Integrate work on calculations linked to practical activities or introduce worksheet based calculations.</p>	<p><i>Sample Assignment D:</i> Vinegar Analysis</p> <p><i>Sample Assignment E:</i> Vitamin C content in food</p> <p><i>Sample Assignment F:</i> Aspirin - A Useful Drug (linked to pharmaceutical industry)</p> <p>N.B. practical work from other units can be used here.</p>
9 – 11	<p>3.1.2: Organisations using science - AO1(b)</p> <p>3.1.1: The importance of health and safety - AO1(c)</p> <p>3.1.3 Science and the Community - AO2(a)</p>	<p>Complete in depth study of organisation:</p> <ul style="list-style-type: none"> • suggest possible visit to/by organisation • candidates to devise suitable questions to link to assignment brief. 	<p><i>Sample Assignment C:</i> The Gum Company (this is an example assignment that can be amended to focus on whichever organisation is chosen).</p>

Week number	Specification Unit Reference and Assessment Objectives	Suggested Learning Activities	Resources
12	Time to revisit	Check full coverage of assessment criteria requirements. Complete URS.	

Unit G620 - Assessment Evidence Grid

Unit G620: Science at work				
What the candidate needs to do:				
<p>The candidate needs to produce a research portfolio related to information on organisations that use science [50 marks].</p> <p>This evidence needs to include:</p> <p>AO1: records of the candidate's survey of four science-based organisations; an in-depth study of one of them, including information on health and safety issues [19];</p> <p>AO2: information showing an understanding of the impact on society of the candidate's one chosen organisation, with evidence that the candidate has completed relevant calculations <i>either</i> using provided data <i>or</i> on at least one practical procedure carried out [10];</p> <p>AO3: evidence that the candidate has completed safely two practical procedures and recorded, processed and evaluated the results [21].</p>				
How the candidate will be assessed:				
Assessment Objective	Mark Band 1	Mark Band 2	Mark Band 3	Mark Awarded
AO1	Candidate will demonstrate they have carried out a survey on four science-based organisations with some information selected and presented, generally using correct spelling, punctuation and grammar; <div style="text-align: right;">[0 1 2]</div>	candidate will demonstrate a researched survey on four science-based organisations with the relevant information selected and clearly presented, generally using correct terminology, spelling, punctuation and grammar; <div style="text-align: right;">[3 4]</div>	candidate will demonstrate a thorough, researched survey on four science-based organisations with evidence that relevant information has been selected from a range of sources and is clearly and logically presented, using accurate terminology, correct spelling, punctuation and grammar. <div style="text-align: right;">[5 6]</div>	
	Candidate will produce a study on one science-based organisation which shows some information has been selected and presented, generally using correct spelling, punctuation and grammar; <div style="text-align: right;">[0 1 2]</div>	candidate will produce a researched study based on one science-based organisation with relevant information selected and clearly and logically presented, generally using correct terminology, spelling, punctuation and grammar; <div style="text-align: right;">[3 4 5]</div>	candidate will produce a thorough, researched, in-depth study on one science-based organisation, with evidence that relevant information has been selected from a range of sources and is clearly and logically presented, using accurate terminology and correct spelling, punctuation and grammar; candidate will include some evaluation and justification of the material used. <div style="text-align: right;">[6 7]</div>	
	Candidate will demonstrate a basic knowledge and understanding of health and safety laws and regulations; <div style="text-align: right;">[0 1 2]</div>	candidate will demonstrate knowledge and understanding of the appropriate health and safety laws and regulations; there will be few omissions or inaccuracies; <div style="text-align: right;">[3 4]</div>	candidate will demonstrate a comprehensive knowledge and understanding of health and safety laws and regulations with information on how organisations comply with the legislation. <div style="text-align: right;">[5 6]</div>	

Unit G620: Science at work (continued)				
Assessment Objective	Mark Band 1	Mark Band 2	Mark Band 3	Mark Awarded
AO2	Candidate will include some understanding of the impact one organisation has on society; this lacks detail and includes some omissions; [0 1 2]	candidate will include a detailed and researched study of the impact of one organisation on society; the report will have few errors or omissions; [3 4]	candidate will produce a comprehensive and thoroughly researched study of the impact of one organisation on society focusing on all the issues stated. [5 6]	/10
	Candidate will perform a number of straightforward calculations using provided data, or data obtained from one practical procedure, and generally obtain the correct solutions; [0 1]	candidate will perform a number of straightforward and complex calculations using provided data, or data obtained from at least one practical procedure, and generally obtain the correct solutions; [2 3]	candidate will perform a number of straightforward and complex calculations using researched data, or data obtained from at least one practical procedure, and obtain the correct solutions to an appropriate degree of accuracy. [4]	
AO3	Candidate will record evidence of the completion of two practical tasks linked to a vocational context in which risk assessments have been used; [0 1 2 3 4]	candidate will record evidence of the confident completion of two practical tasks linked to a vocational context in which risk assessments have been developed and used; [5 6]	candidate will record evidence of the accurate completion of two practical tasks linked to a vocational context in which risk assessments have been produced with evidence that equipment has been used safely and to the appropriate degree of accuracy. [7 8]	/21
	Candidate has made and recorded relevant observations or measurements; [0 1 2]	candidate has made and recorded all relevant observations or measurements; [3 4]	candidate has made and accurately recorded all relevant observations or measurements with the appropriate precision. [5 6]	
	Candidate has suitably processed results, with some interpretation; [0 1 2]	candidate has accurately processed and interpreted the results drawing basic conclusions; [3 4 5]	candidate has accurately processed and interpreted all results and evaluated where appropriate. [6 7]	
Total mark awarded:				/50