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## A2 Teaching Plan: Unit 8 Investigating the Scientist's Work

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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.

Week Number	Specification Unit Reference and Assessment Objectives	Suggested Learning Activities	Resources
1	<b>8.2.1</b> Research for an investigation AO1 b	<ul style="list-style-type: none"><li>• Teacher-led discussion of investigations already completed for GCSE and work done for Unit 4</li><li>• Discussion on sources of information and validity</li><li>• Necessity to record all sources with all details</li><li>• Students begin research on their own investigation and make sure information found is recorded.</li></ul>	<ul style="list-style-type: none"><li>• Internet</li><li>• Books in library</li><li>• Previous coursework/practical experiments used in AS</li><li>• Literature provided by industry and other institutions</li></ul>
2	<b>8.2.1/2</b> Research for practical techniques Risk assessment	<ul style="list-style-type: none"><li>• Teacher-led review of practical techniques both quantitative and qualitative used in AS Biology/Chemistry/Physics experiments. Include accuracy of apparatus</li><li>• Students research and record possible practical techniques for their investigations for more than one method found</li><li>• Limitations in use of some techniques recorded</li><li>• Selection of techniques recorded. Method/s written up.</li></ul>	<ul style="list-style-type: none"><li>• Practical reference books</li><li>• Internet</li><li>• (B.S.I. web site)</li><li>• Previous work</li><li>• Text books (e.g. Salter's approach text books)</li></ul>

Week Number	Specification Unit Reference and Assessment Objectives	Suggested Learning Activities	Resources
3	<b>8.2.1</b> Organisation AO1a	<ul style="list-style-type: none"> <li>Exemplar plan in Teacher's Guide and work done for Unit 4 discussed</li> <li>Students draw up own plan</li> <li>Plan submitted for provisional grading</li> <li>Students order equipment</li> <li>Difficulties recorded, including any ethical ones.</li> </ul>	<ul style="list-style-type: none"> <li>Access to lab technicians</li> </ul>
Weeks 4 to 8 are for actual experimental work	<b>8.2.2</b> Trial of practical techniques AO3 a	<ul style="list-style-type: none"> <li>First rough attempt at practical work to discover problems etc. Write up of practical including problems and solutions recorded. Risk assessment included.</li> </ul>	<ul style="list-style-type: none"> <li>Laboratory equipment</li> </ul>
	<b>8.2.2</b> Obtaining primary data AO2a	<ul style="list-style-type: none"> <li>Investigation carried out using as many techniques as possible</li> <li>Results recorded, written up in appropriate format and to appropriate accuracy</li> <li>Submitted for moderation.</li> </ul>	<ul style="list-style-type: none"> <li>Laboratory equipment</li> </ul>
	<b>8.2.2</b> Data review	<ul style="list-style-type: none"> <li>Evaluation of accuracy and reliability of data</li> <li>Identification of additional data needed</li> <li>Review of range of samples tested</li> <li>Comparison with secondary data.</li> </ul>	<ul style="list-style-type: none"> <li>Data books</li> <li>Reference books</li> <li>Internet.</li> </ul>
	<b>8.2.3</b> Processing data/errors	<ul style="list-style-type: none"> <li>Teacher led discussion on errors</li> <li>Data processed and errors calculated.</li> </ul>	<ul style="list-style-type: none"> <li>Reference books</li> </ul>

Week Number	Specification Unit Reference and Assessment Objectives	Suggested Learning Activities	Resources
	<b>8.2.3</b> Presentation of results A02 b and c	<ul style="list-style-type: none"> <li>• Discussion on ways in which results can be presented</li> <li>• Use of graphs</li> <li>• Results presented in suitable way.</li> </ul>	
9	<b>8.2.4</b> Evaluation of results	<ul style="list-style-type: none"> <li>• Conclusions drawn</li> <li>• Sources of error identified</li> <li>• Critical evaluation of method(s) used.</li> </ul>	
10	Review of plan	<ul style="list-style-type: none"> <li>• Students review plan and then submit it.</li> </ul>	
11	<b>8.2.5</b> Write up report AO3c	<ul style="list-style-type: none"> <li>• Outcomes written up.</li> </ul>	
12	<b>8.2.5</b> Write up report AO3 d and e	<ul style="list-style-type: none"> <li>• Evaluation of the investigation completed.</li> </ul>	