**Investigating and Research Skills at
AS/A GCE Geography (from 2016)**

**Teacher Guidance**

These resources will be useful when developing student’s investigating and research skills and techniques at KS5 in preparation for external assessments at **AS** level and their non-examined assessment at **A level.**

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Resource materials and interactive activities have been developed to help learners set success criteria, develop key ideas and a sequence of questions for their investigations. The units exemplify how to use sources and data collection; how to present and analyse data before drawing conclusions and evaluating the investigation.

The resources can be used by a teacher, using a data projector and an interactive whiteboard, as a focus for discussion with the whole class or alternately they are suitable for independent use by students as they research and plan their investigation. The units may also be used as a revision tool prior to an examination. Some screens contain documents that can be downloaded and printed for completion by the students.

The units focus on skills related to the six stages of the enquiry process as outlined in **Appendix 1** below:

The stages include:

1. Context and **planning**
2. Data **collection**
3. **Presentation** and display
4. **Analysis** and interpretation of findings
5. **Conclusion**
6. **Evaluation**

The units do not include all stages of a complete investigation but exemplify the skills required at each stage so that students can then embed these skills within their own investigations. **Appendix 2** below gives an overview of the content of the resource.

As there is a requirement for **AS** investigations on the new specification (from 2016) to concentrate on Changing Places and Changing Landscapes (Coastal or Glaciated) these resources should be used only as a **guide** to the stages and techniques required. The resource could be a stimulus to develop individual investigations for the non-exam assessment at **A level.**

The investigations included are:

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|  | **Investigation 1** | **Investigation 2** | **Investigation 3** |
| **Topic** | **Hydrology**  | **Counterurbanisation** | **Retail Patterns** |
| **Key** **Question** | What impacts do physical factors have on infiltration and overland flow? | What are the impacts of counterurbanisation on a small village? | What is the impact of competition from out of town retail locations on the CBD?  |

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|  | **Investigation 4** | **Investigation 5** | **Investigation 6** |
| **Topic** | **Deprivation** | **Microclimates** | **Deprivation** |
| **Key** **Question** | Does deprivation decrease with distance from the city centre? | Does Snowdon show characteristics of a mountain microclimate? | How do patterns of deprivation vary across a city?  |

**Using the Units**

The resources are easy to use with simple navigation and other functions located on the tool bar as shown below.

Tools

Move forward and back

Go to Page

Full Screen

Print

Tools
Support

If a navigation arrow is located on a screen (rather than on the tool bar) then click on the arrow to reveal additional screens before moving on.

Some screens are supported with downloadable documents which can be adapted, saved and printed. A coloured symbol as shown here will appear in the bottom right hand corner of a screen where these documents are available.

As a small number of screens link directly to other websites to access maps, aerial photographs and data it is advised that these units are used on a computer **that has access to the Internet.**

**Appendix 1 – The Six Enquiry Stages (WJEC and Eduqas)**

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| **Sequence and enquiry questions** | **Geographical skills** |
| **1.**  **Context and****planning** | Prepare to investigate a geographical question in the field;make and justify decisions on the task including datacollection methods and how to use them; define and refinethe research question(s) that underpin the context of thefield investigation; risk and ethical issues |
| **2. Methods of field****investigation** | Acquire field data (primary) and relevant literature(secondary data / information) pertinent to the researchquestion; observe and record in the field and understandthe theory / context for the research question, usingquantitative and qualitative methods and primary andsecondary data / information |
| **3. Data presentation****of findings with a range of techniques** | Process a range of field and any relevant secondary data /information using quantitative and qualitative methods inorder to lead to appropriate analysis |
| **4. Analysis and****interpretation of****findings** | Interrogate (interpret and analyse) data / information fromfield (primary) sources and, as relevant, secondary data /information; describe patterns, trends, relationships; applyknowledge and understanding of geographical knowledge,concepts and processes and theory to specific evidencecollected to understand field observations |
| **5. Conclusions** | Synthesise findings to draw conclusions based on evidenceand theoretical research |
| **6. Evaluation** | Critically reflect on every stage of the whole investigation inorder to appreciate the strengths and limitations of theprimary and secondary data, links to original question*;* notestrengths and limitations (accuracy, validity and reliability)and anomalies and / or errors or misuse of data; evaluatethe methodology including, if relevant, samplingtechniques; suggest improvements for further research |

**Appendix 2 - Investigating and Research Skills - Overview**

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| --- | --- | --- | --- |
|  | **Investigation 1** | **Investigation 2** | **Investigation 3** |
| **Enquiry Stage** | **Hydrology**  | **Counterurbanisation** | **Retail Patterns** |
| **Context and planning** | The aspects of planning in this unit include, choosing a suitable location for the investigation and how to conduct a risk assessment of the location. Sampling is also discussed and the unit ends with a planning activity. | The planning elements in this unit include an understanding and being able to recognise the features of counterurbanisation. Attention is given to asking relevant sub-questions and developing a methodology for sampling and gathering data. |  |
| **Methods of field****investigation (data collection)** |  | A questionnaire is used to gather data in the village and a detailed introduction to questionnaire design is included. The sampling methodology discussed in the first unit is illustrated in the context of the investigation. | A variety of methods of gathering data relating to a retail study are outlined including the use of Goad maps, pedestrian counts, photographs, interviews and questionnaires. Appropriate sampling methods are also discussed. |
| **Presentation****of findings** |  |  | Attention is given to the advantages and disadvantages of different graphing techniques. Flow diagrams, the effective use of photographs and the use of talking heads are also discussed.  |
| **Analysis and****interpretation**  |  |  | Some activities regarding analysis and interpretation are included in the unit above. |
| **Conclusion**  | Guidance on writing an effective conclusion to an AS GCE investigation. Having completed the unit the guidance may be applied to the students’ own work. |  |  |
|  | **Investigation 4** | **Investigation 5** | **Investigation 6** |
| **Enquiry Stage** | **Deprivation** | **Microclimates** | **Deprivation** |
| **Context and planning** |  |  |  |
| **Methods of field****investigation (data collection)** | Before exemplifying several data collection methods attention is given to the definition of deprivation and to its characteristics. Methods of data collection both primary and secondary are exemplified including questionnaires, bi-polar surveys, field sketches and mental maps. |  |  |
| **Presentation****of findings**  | This section gives students opportunities to evaluate methods of presenting findings according to set criteria including compound and stacked bar graphs and radar charts. A model exam answer with commentary is also included. |  | An outline of the work developed in the two previous stages is included before several methods of presenting findings are evaluated. Annotated photographs, dispersion graphs, proportional circles and located bar graphs are included in the unit. |
| **Analysis and Interpretation** |  | The section includes a number of screens introducing the work to this point with detailed reference to data collection methods. Scatter graphs, bar graphs and the Spearman Rank Correlation Coefficient are included in the analysis and interpretation work. | The unit focuses on the analysis of the quality of the environment along the transect. Certain contrasting areas are compared and the analysis and interpretation are clearly noted for each one. An example examination answer is included at the end of the work. |
| **Evaluation** |  | The projects strengths and weaknesses can be discussed with an interactive activity. Guidance on writing an evaluation is provided with two evaluations written under exam conditions. Mark schemes and comments are included. |  |