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Edexcel GCSE

Geography A

Geographical Foundations

Controlled Assessment

Revised Edition Workbook for the 2012 Spec

ALWAYS LEARNING

PEARSON

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Contents

Introduction to your controlled assessment workbook

This workbook will help you plan and prepare for the controlled assessment (Unit 4: Researching Geography) as part of the Edexcel GCSE A Geography course (2012 Spec). It follows the stages of the assessment, including planning, doing fieldwork and handing in your final piece of work.

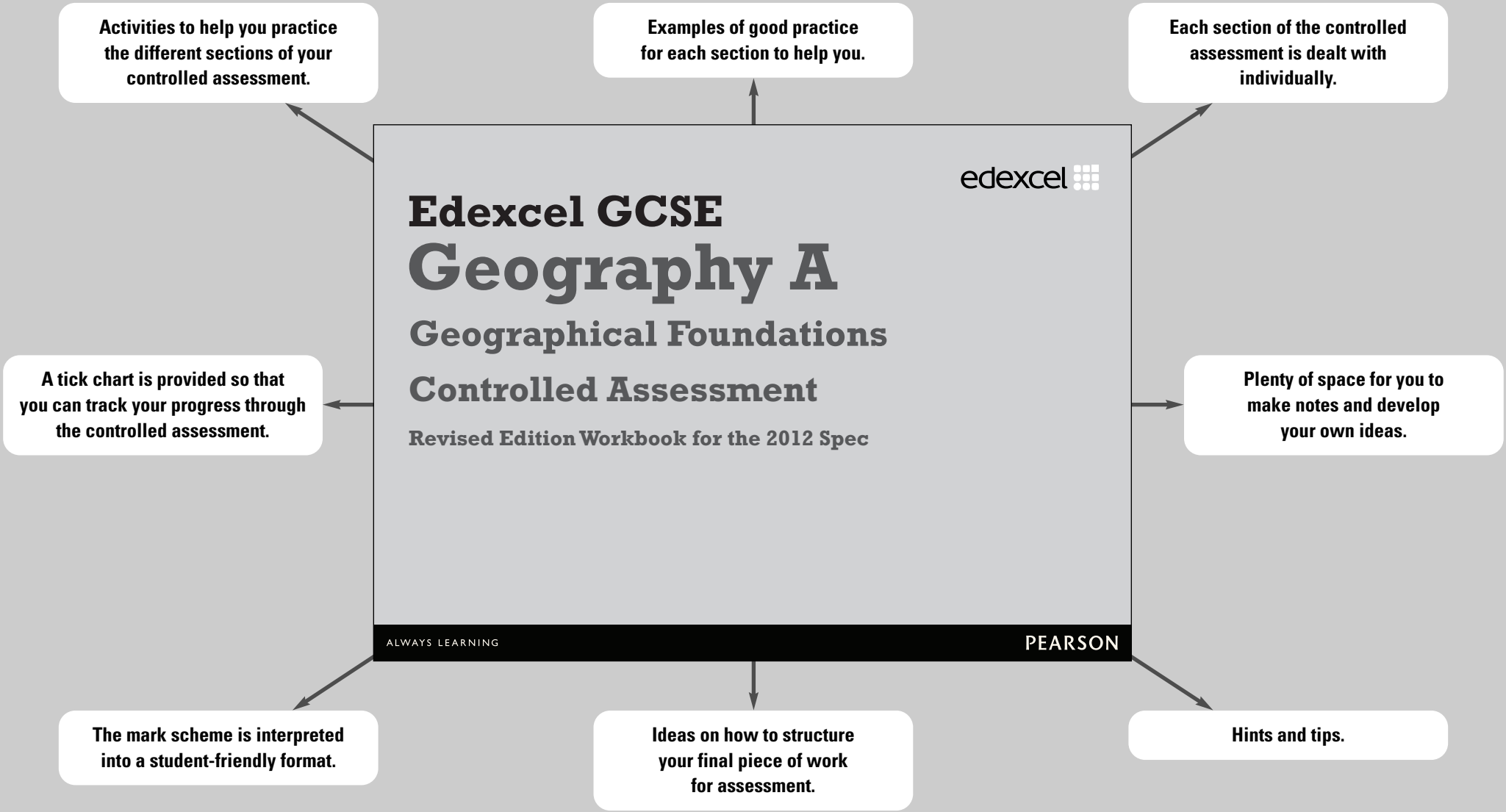
It contains:

- Advice and guidance on how to do **fieldwork**.
- Practice ***activities*** to help prepare you for each stage.
- Sample work for you to review, together with comments.
- Details of how to understand the Edexcel **mark scheme** for the controlled assessment.
- Glossary words in **bold** throughout the text aid your understanding.

1 Introduction to controlled assessment

The purpose of this book is to help you to understand the controlled assessment part of the examination.

The book will help you in a number of ways.



Outline of controls

Unit 4 of the specification is different to the other units because you do not have to do an examination which is marked by examiners. It is an internally assessed piece of work known as controlled assessment. Controlled assessment is worth 25% of your final examination mark which is the same as the other three units. Therefore it is very important that you perform to the best of your ability in this section of the examination.

Your work should take the form of an investigation with chapters on the different sections of the controlled assessment. It will be marked by your teacher and some of the pieces of work will be sent to a moderator who has been appointed by Edexcel. Your teacher will give you guidance on how long to spend on each section of the work but this will be flexible because we all work at different speeds. The word limit is 2,000 words (plus or minus 10%) so try not to get carried away. The work is carried out under different levels of control which are explained below.

What is controlled assessment?

Your investigation should be split into 5 chapters:

- Purpose of investigation
- Methods of collecting data
- Methods of presenting data
- Analysis and conclusions
- Evaluation.

You will also need to plan and organise your investigation.

You are required to produce around 2,000 words. All words, including tables, graphs, quotations and references must be included in the word total. Include **only** relevant data and be selective. Other fieldwork data may be used as part of an additional commentary, e.g. in the conclusions and evaluation.

Some of your work will be carried out under a **limited level of control**.

- You can chat to your friends when you are working (if your teacher allows it, of course!)
- You can ask your teacher for advice on how to complete the work. For example the types of graphs to use to display your information.

The sections of your work which are under a limited level of control are the:

- Introduction (purpose of the investigation)
- Methods of collecting data
- Methods of presenting data.

Some of your work will be carried out under a **high level of control**.

- This means that it cannot be taken home – so no homework while these sections are being completed, brilliant!
- Your teacher or another member of staff at the school must be present when you are doing the work.
- Your work will be taken in by your teacher at the end of the lesson and given out at the beginning of the next lesson.
- If your work is being stored electronically it must be secured by password.
- The work must be completed under examination conditions; so no chatting to your friends.
- You may not ask your teacher or anybody else for help.
- Your teacher may teach you the skills involved before you attempt them just like being taught for an examination.

The sections of your work which are under a high level of control are the:

- Analysis
- Conclusion
- Evaluation
- The compilation of the final document – page numbers, contents page.

What do I need to do?

Controlled assessment requires candidates to produce a fieldwork enquiry on a task set by Edexcel. The enquiry will have a number of sections that you have to complete. One of the ways to approach the work is through a route to enquiry.

Step 1a – Planning/pre-fieldwork phase

Task contextualisation

The task may be given to you by your teacher, resulting in a focused question or questions to be addressed, a problem to be solved or an issue to be investigated. The objectives of the investigation are defined in specific terms. Assessment criteria will be discussed with you. (Limited level of control)

Step 1b – Planning/pre-fieldwork phase

Data decisions

You will decide in discussion with your teacher and peers what data is relevant to your task, how the primary data can be collected and what sampling pattern should be used. You will be encouraged to assist in the planning and design of the fieldwork and to access supporting secondary data. (Limited level of control)

Step 2a – Research and data collection

Fieldwork phase

Primary data is collected and recorded. This is when you go on a field trip and collect all the primary data that you will need to answer your task question. You can work in a group with your friends and share the information when you return to school. (Limited level of control)

Step 2b – Research and data collection

Research phase

All of the data you and your friends collected must be collated onto spreadsheets, either by hand or electronically. Primary data presentation methods are agreed.

Primary data is presented. A range of presentation techniques should be used to display your data, such as graphs, tables, maps, field sketches and photographs.

Additional secondary data research is completed. (Limited level of control)

Step 3a – Write up phase

Analysis

Select and refine the presented data to be analysed. You should interpret and analyse the presented data that you have selected. Your results should be described in detail, with analytical comments which draw your findings together. (High level of control)

Step 3b – Write up phase

Conclusion and evaluation

Evaluate the investigation in relation to the limitations of the evidence and validity of the conclusions. Improvements or further investigation should be suggested. You now need to look back over your work and answer these questions:

- Were your data collection techniques appropriate and effective?
- How appropriate were your methods of presentation?
- How well were you able to analyse and conclude your study based on the primary and secondary data you collected?
- How could you have improved your study?

(High level of control)

Step 3c – Write up phase

Final report production

Conclusions are drawn relating to the original objectives. All of the work is combined into a structured final report. Your work should follow a route to enquiry which follows the steps on these two pages. Check that your diagrams are linked to the text and that you have used geographical terminology. Don't forget to check your spelling and grammar, and your word count. (High level of control)

2 What is the purpose of the investigation?

How will my work be marked?

The next section explains how your work will be marked. Your work will be marked by your teachers and moderated by Edexcel to ensure that your work is marked to the same standard as everyone else who is doing Specification A. This section of the controlled assessment is to be written up under limited control – see page 5.

Your teachers will mark your work using six assessment criteria.

This is the mark scheme for the first assessment criterion. This is the introduction to your study.

Assessment criterion a – purpose of investigation	
Mark range	**Descriptor**
0	No location or issue identified.
1–2	The issue or question is weakly identified. Location is mentioned but unclear.
3–4	A clear statement identifies the issue or question. The location is established.
5–6	A well-focused statement that identifies and contextualises the issue or question. The location is focused on the place of the investigation.

Activities

Use the space provided to list and define the key terms you are going to use.

You should use the tick list to ensure that your 'purpose of investigation' section has all the necessary ingredients.

Key terms

Purpose of investigation (6 marks)	Tick when completed
I have stated the task question.	
I have included the sub-questions.	
I have written a description of location.	
I have shown the area of study using maps and aerial photographs.	
I have included a clear statement of intent based on a theory, model or geographical process which puts my study into context.	
I have included secondary evidence, if appropriate.	

Your introduction

This is the introduction to your work. If you look at the mark scheme above there are certain criteria which need to be covered to achieve full marks. These criteria will be explained in this section.

Firstly let's deal with the task **question**.

This is referred to in the mark scheme as the 'issue or question'.

The task question is the one that your teacher will give to you. Your teacher may also break the question down for you into smaller sub-questions. This depends on how your teacher wants to organise the enquiry.

Activities

First write out your task question.

Now devise two or three sub-questions.

My task questions

My sub-questions

Sub-questions

Here are some sample sub-questions and hypotheses to help you complete the activity.

Sample task question for Tourism

Investigate how tourism has affected the environment of your chosen location.

The chosen location was Lulworth Cove in Dorset.

A statement was devised along with three sub-questions, some of which might be selected to answer the task question.

Since the development of Lulworth Cove as a tourist destination:

- The footpaths have been eroded badly.
- There are too many tourists which has ruined the peaceful atmosphere of the area.
- The car park and other developments at Lulworth are visually intrusive.

Investigate

Sample task question for Urban areas

Investigate how and why the Central Business District (CBD) of an urban area has been changed in the last 30 years.

The chosen location was Reading.

The questions were devised, some of which might be selected to answer the task question.

Does your chosen location have a typical CBD?

- Does the CBD have fewer residential buildings than it did 30 years ago?
- Does the CBD have pedestrianised streets which are of a high environmental quality?
- Does the CBD have high order shops?

Contextualisation

The mark scheme asks you to provide a clear statement which helps to identify or set the scene for the **task** question. This can be done in a number of ways.

One way would be to use a **theory**, model or geographical process to put your study into context. You should not be concerned if there is not a theory that you can base your investigation on but in many cases there will be.

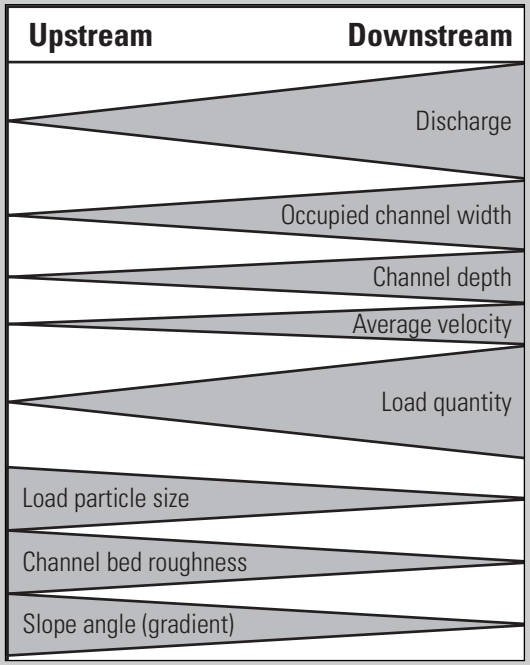
For example:

A sample task for the Rivers controlled assessments could be:

Investigate how channel characteristics vary along a chosen river.

The investigation could use Bradshaw's model as the geographical theory behind the investigation.

The chosen study location was the River Afon Tarell in the Brecon Beacons.



There would be a statement such as *''If the Afon Tarell conforms to the Bradshaw model its characteristics will change in the following way''.*

The theory, model or geographical process that my work is based on

If my findings conform to the theory they will show the following tendencies

You should use **secondary data** to support your research/fieldwork.

This could be a study about your selected task which has been published (either in a book or on the web). You would have to research on the Internet to find information on your particular study area. It must, of course, be written up in your own words and the source acknowledged, but the original report could be put into an appendix.

Secondary evidence

Secondary evidence could also take the form of data collected from past studies in the same area. It could also take the form of data from National Park websites, local authority statistics or aerial photographs.

For example:

A sample task for the Rivers controlled assessments could be:

Investigate how channel characteristics vary along a chosen river.

The previous year group may have collected data on the channel characteristics which can be compared with this year group to confirm the conclusions drawn.

Activities

Either
Research the theory, model or geographical process that is relevant to your investigation.
Or
Research the secondary evidence that is relevant to your investigation.

Secondary evidence research

I have found information on the following websites

The information I have found is

The location of your study

The location of your controlled assessment study should be clearly stated both in writing and by a map(s). If the higher levels in the mark range are to be achieved there should be a map focused on the area of study. The map should clearly show the roads and places that the study is based on.

A map can be downloaded from the Internet. This would be worth credit but not a high mark. Maps that are hand drawn, taking information from a number of different sources, or downloaded from the Internet and **annotated** will receive the highest credit.

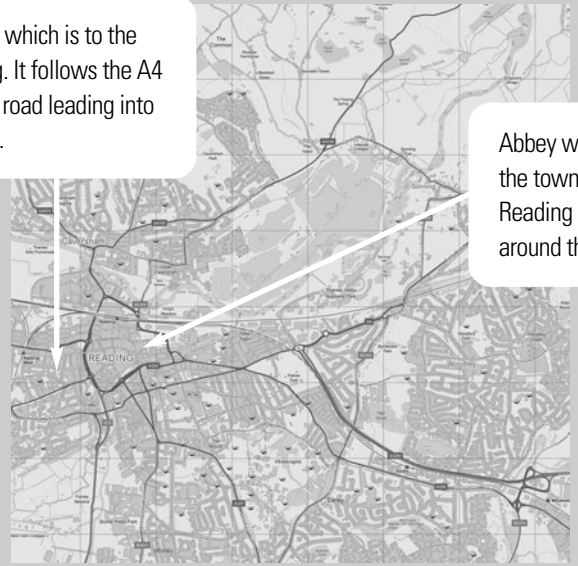
For example:

The maps below were used by a student completing a study that was based on an urban areas task question that asked for different parts of the urban area to be compared.

Map 1 is an example of a map downloaded from the Internet and annotated to show all the wards in Reading, indicating the ones where the investigation will take place, but does not locate the actual data collection sites.

Map 2 is an example of a hand drawn map annotated to show the location of sites where the techniques were carried out.

Map 1



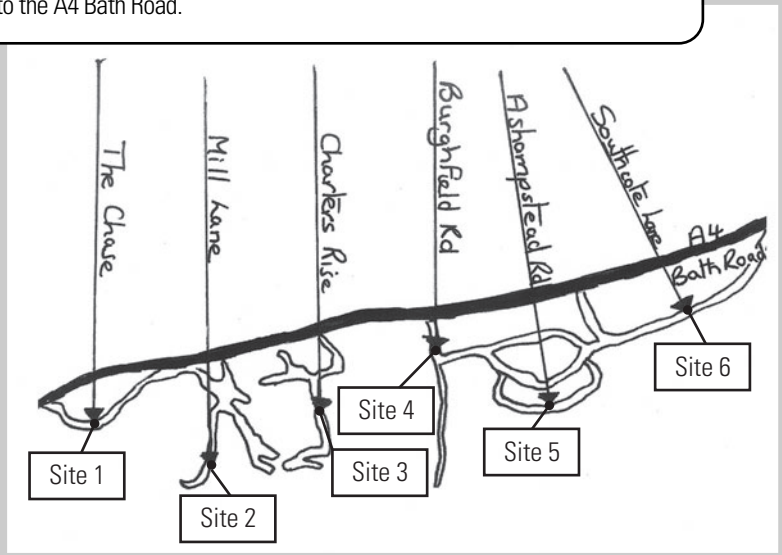
On the roads shown we performed the following techniques:

- a housing survey
- an environment survey
- a questionnaire.

A traffic count was also completed at both ends of the road for 10 minutes.

The class worked in groups, on a number of roads running roughly parallel to the A4 Bath Road.

Map 2



Activities

- Do these maps fulfil the criteria for location to a level 3 standard?
- Using the space provided on page 15, plan the location section of your study. Remember to include a written statement of location and a range of maps drawn to different scales.

Using simple web-based GIS/visualisation

You have to show that you have used simple GIS in your controlled assessment.

GIS stands for Geographical Information System. It usually has three components:

- a map
- data that can be displayed on the map
- a piece of computer software/website that lets the user choose which data is displayed and how.

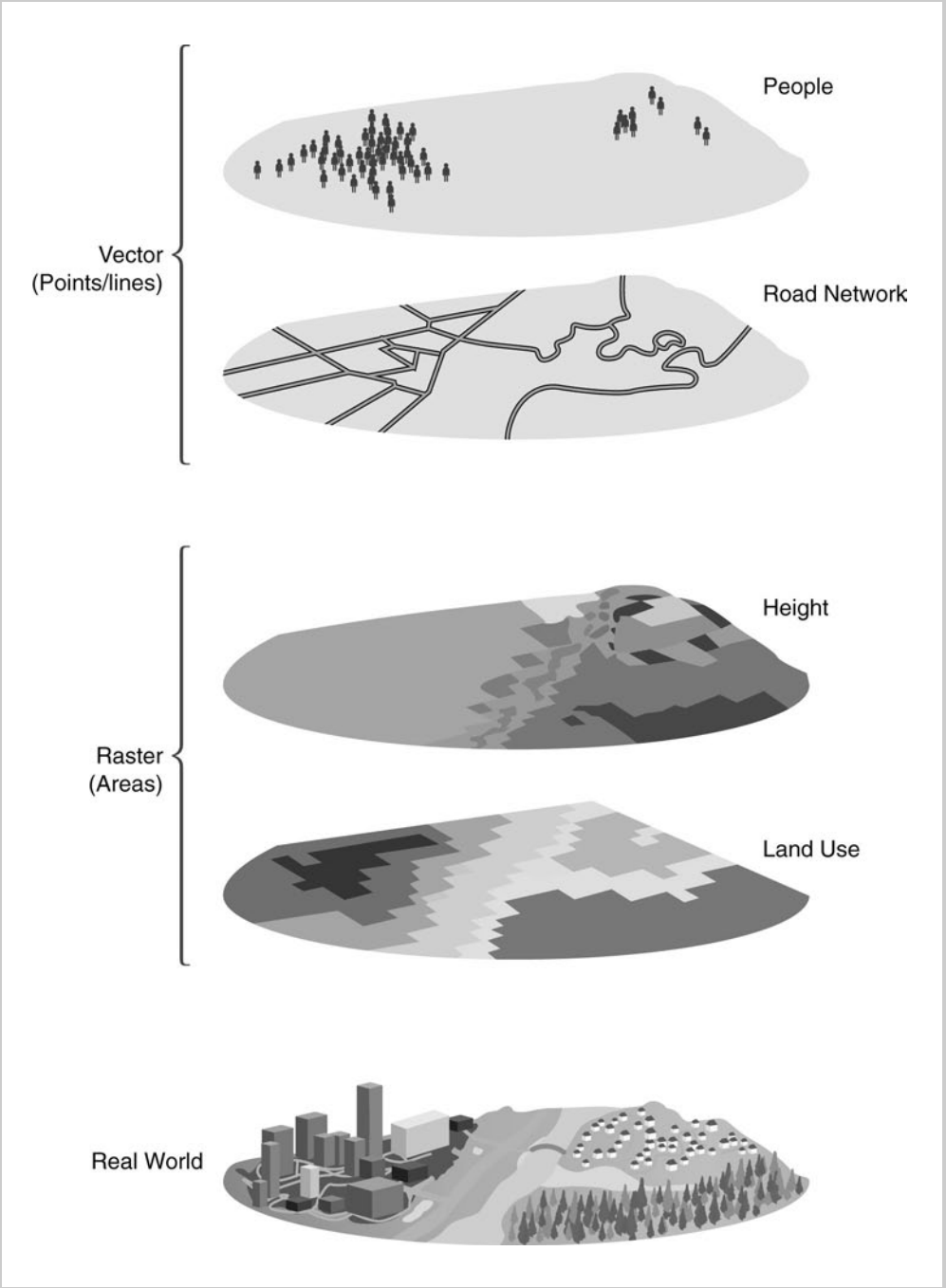
GIS and digital map technology is very important in the current world of work as just about every part of industry and public service now depends on GIS. It is essential to retail, agriculture, the emergency services, building and planning.

Geographic information is simply information that describes the locations of physical and human features found on the Earth's surface.

This geographic information can include socio-economic and demographic data as well as physical and environmental data.
In GIS, the data is digitally coded and then represented as points and lines (based on 'vectors') or as areas (based on 'rasters') on a map.

Discussion points

- Describe your experiences of using GIS/visualisation (they don't have to be linked to geography), e.g. Sat nav in a car. Was it a help or was it an obstacle?
- Has anyone had experience of using GIS systems on the Internet (Google Earth, Google Maps, Microsoft maps, etc.) or with paid-for systems such as Aegis, ARCGIS, Memory Map, Anquet Maps or Infomapper?
- What did you learn from using GIS systems? How did you use the data you collected? Did you experience any difficulties in using the GIS system?



The location of my study

3 Methods of collecting data

How will my work be marked?

This section of the controlled assessment is to be written up under limited control – see page 5.

This is the part of the study where you collect your data. You can work in a group with your friends when you collect the data. You should then collate the data when you return to school.

Assessment criterion b – methods of collecting data	
Mark range	
0	There is no evidence of data collected or method(s) of collection.
1–3	There is limited evidence of primary and secondary data collected by the student. There is little explanation of why the methods were used to collect primary and secondary data. The contribution of the student to the primary data collection is briefly described. Limited evidence of risk assessment. No obvious evidence of the use of GIS to gather data.
4–6	The primary and secondary data has been collected by the student and is appropriate for the investigation. There is some explanation of why the methods were used to collect primary and secondary data. The contribution of the student to the primary data collection is clearly described. Clear evidence of risk assessment having been undertaken. Some limited use of GIS to collect information.
7–9	The primary and secondary data has been accurately collected by the student and is appropriate for the investigation. There is detailed explanation of why the methods were used to collect primary and secondary data. The contribution of the student to the primary data collection is described in detail. Clear reference to risk assessment, explicitly linked to the investigation. Use of GIS is clear and well linked to chosen issue or question.

Activities

Use the space provided to list and define the key terms you are going to use.

You should use the tick list to ensure that your 'methods of collecting data' section has all the necessary ingredients.

Key terms

Methods of collecting data (9 marks)	Tick when completed
I have clearly described the methods used to collect primary and secondary data.	
I have used and described how GIS helped me to collect data	
I have explained in detail the methods used to collect data.	
I have stated where and when I carried out each technique.	
I have stated why I used each technique.	
I have included all of the relevant results in tables and charts.	

What methods could be used to collect the data?

The methods used to collect the data may be determined by your teacher. In other centres, students will help to determine the methods that are used. There are many different methods used to collect data. The following section will go through some methods that could be used to collect data for each of the controlled assessment themes based on the sample tasks that were provided by Edexcel. You will only have to do one of these themes so flick through the book and find the one that you are completing.

It is often a good idea to collect your data with a group of friends; on returning to school the data will then have to be collated. You should produce neat copies of your results and include them in your work.

You should discuss the advantages, problems and limitations of your methods of collecting data.

How you carried out the techniques must also be written up.
This can be done in a number of ways:

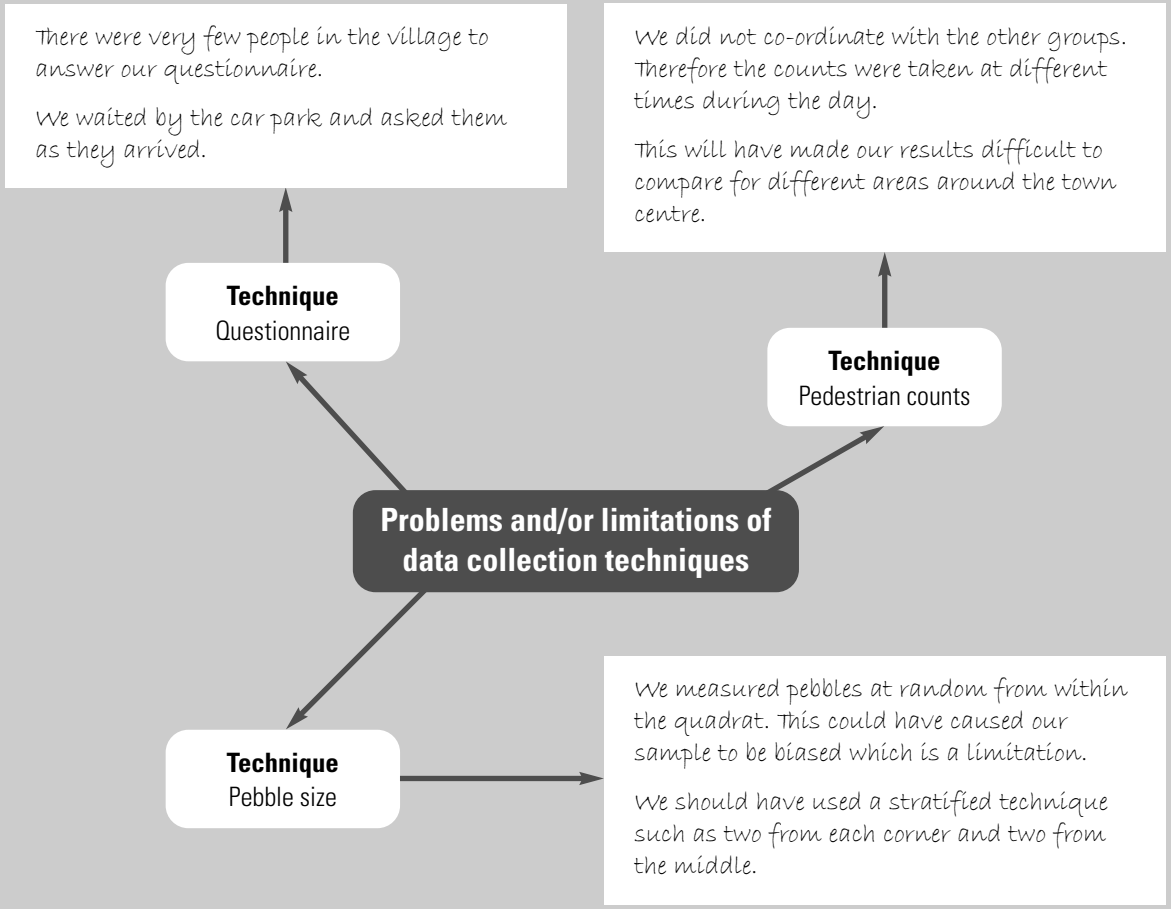
- in a table
- in written text, taking one method at a time
- around a photograph of you or a friend carrying out the technique. This shows that you were directly involved in collecting data.

Evaluation

At the end of this section you will be shown one way of writing up your methodology that is in the form of a table. The third column may be used to evaluate your data collection.

What is meant by evaluation? You should discuss the advantages, problems and limitations of your methods.

You could note ideas while you are out in the field actually doing the work. If you leave this section until the end of your work you will forget the key points. Remember, though, that the actual write up of the evaluation must be done under a high level of control.



Problems

Limitations

Theme – Coastal processes, landforms and management

On this page there are some methods that could be used to answer task questions for the coasts theme. The following page is part of the methodology section of a student's work. This will give you ideas on how to write up your methods.

Method – Speed and direction of longshore drift
A high visibility object is thrown into the sea and timed for five minutes. The direction and distance it has moved is noted down. The exercise should be repeated ten times.

Method – Use of GIS
You might use a hand-held device to record your information.

Method – Sand build up on either side of a groyne
The height of sand is measured on either side of the **groyne**. This should be done at two points along the groyne, in the middle of the groyne and next to the sea wall.

TASK QUESTION
Investigate how effective the coastal management is at your chosen location.

Method – Cliff profiles
The angle of the cliff face is recorded using a **clinometer** and ranging poles/metre rulers.

Method – Beach profiles
The angle of the beach is recorded. Readings are taken using a clinometer every ten metres from the sea to the sea wall.

Method – Pebbles size measurements
A **quadrat** is placed on the ground five metres up the beach from the low tide mark. Ten stones should be chosen and measured, two from each corner and two from the centre of the quadrat.

Method – Line transect
Walk along the beach and note down what is on either side of you. This could be a visual record of the management techniques of a coastal area. You can also record the pebble size and measurement changes by placing a quadrat at regular intervals along the line transect.

Theme – Coastal processes, landforms and management

This extract is part of a student's methodology section on assessing the extent and direction of longshore drift along a coastline.

A ranging pole was placed on the beach 5 metres from the sea...

Another pole was placed 100 metres south of the first pole...

The orange was thrown into the sea as far out as the thrower could manage before the first pole...

The stopwatch was started when the orange passed the first pole. It was stopped when the orange reached the second pole. The task was repeated 10 times...

The time was recorded on a logging sheet.

In the space below, rewrite this student's response to achieve the top mark band on the mark scheme (see page 16 for the assessment criteria). To do this each sentence should contain detailed description and explanation of why this method was selected.

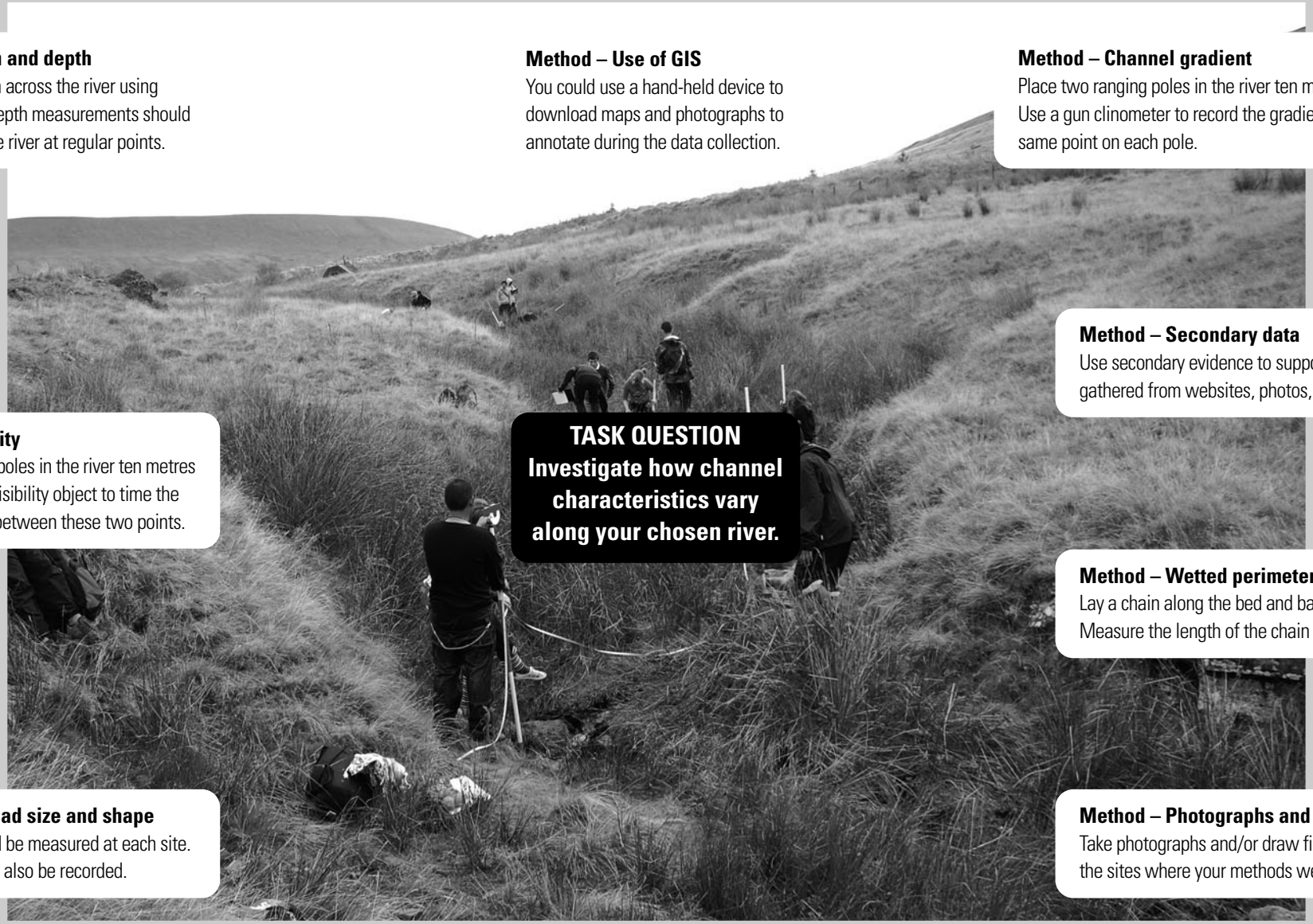
Theme – River processes, landforms and flooding

On this page are some methods that could be used to answer task questions for the rivers theme. The following page is part of the methodology section of a student's work. This will give you ideas on how to write up your methods.

Method – Width and depth
Measure the width across the river using a tape measure. Depth measurements should be taken across the river at regular points.

Method – Use of GIS
You could use a hand-held device to download maps and photographs to annotate during the data collection.

Method – Channel gradient
Place two ranging poles in the river ten metres apart. Use a gun clinometer to record the gradient between the same point on each pole.



Method – Secondary data
Use secondary evidence to support your study, gathered from websites, photos, maps, etc.

TASK QUESTION
Investigate how channel characteristics vary along your chosen river.

Method – Velocity
Place two ranging poles in the river ten metres apart. Use a high visibility object to time the speed of the river between these two points.

Method – Wetted perimeter
Lay a chain along the bed and banks of a river. Measure the length of the chain that is wet.

Method – Bedload size and shape
Ten pebbles should be measured at each site. Their shape should also be recorded.

Method – Photographs and field sketches
Take photographs and/or draw field sketches of the sites where your methods were carried out.

Theme – River processes, landforms and flooding

The extract below is part of a student's methodology section on how channel characteristics vary along a river.

> A ranging pole was placed in the river. Another pole was placed 10 metres downstream of the first pole. An orange was thrown into the river just before the first pole…
>
> The stopwatch was started when the orange passed the first pole. It was stopped when the orange reached the second pole. The orange was put in the river at different places across the channel…
>
> The task was repeated 10 times…

In the space below, rewrite this student's response to achieve the top mark band on the mark scheme (see page 16 for the assessment criteria). To do this each sentence should contain detailed description and explanation of what is happening and why.

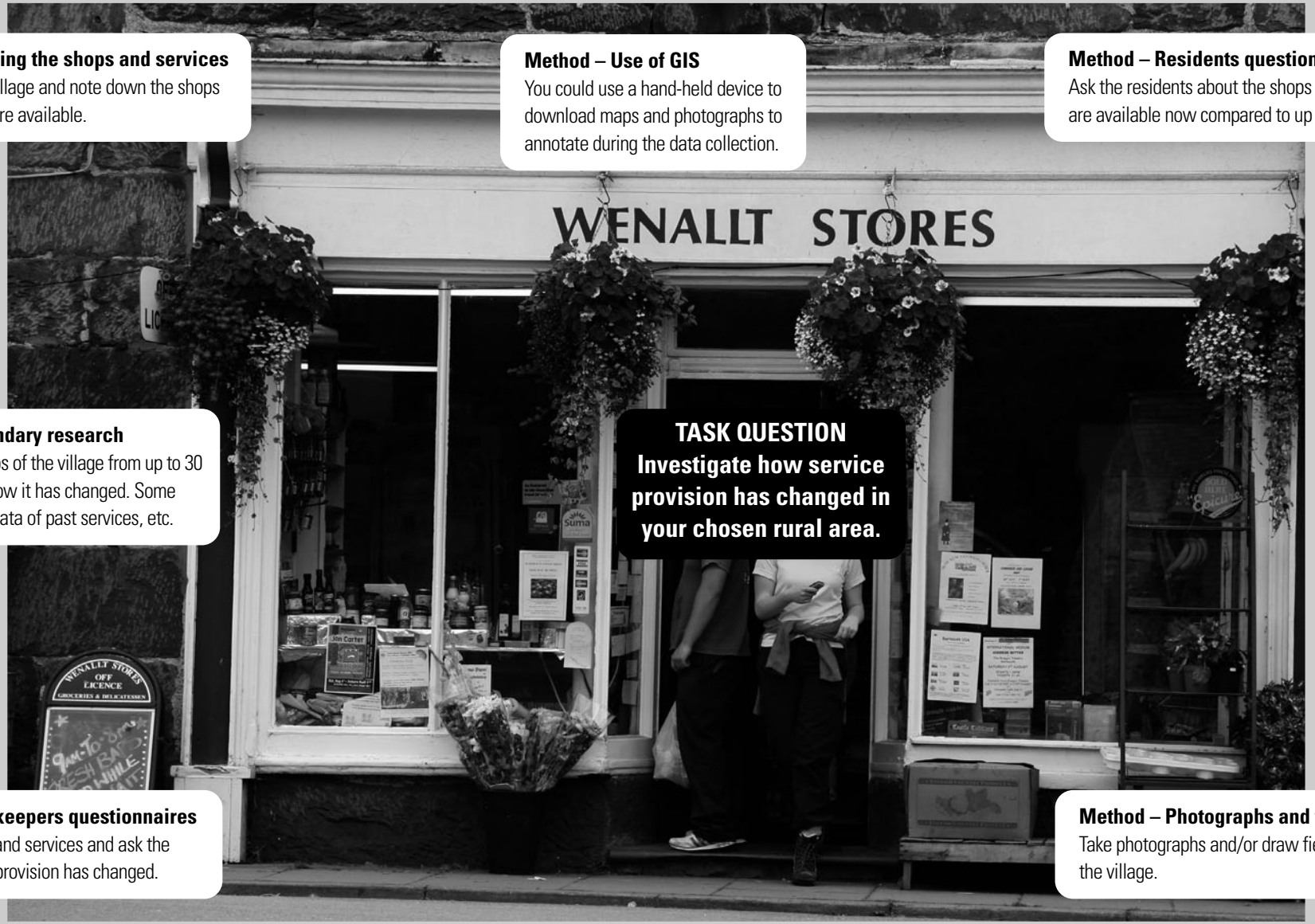
Theme – Changes in the rural landscape

On this page are some methods that could be used to answer task questions for the rural landscape theme. The following page is part of the methodology section of a student's work. This will give you ideas on how to write up your methods.

Method – Mapping the shops and services
Walk around the village and note down the shops and services that are available.

Method – Use of GIS
You could use a hand-held device to download maps and photographs to annotate during the data collection.

Method – Residents questionnaires
Ask the residents about the shops and services that are available now compared to up to 30 years ago.



TASK QUESTION
Investigate how service provision has changed in your chosen rural area.

Method – Secondary research
Find **land use** maps of the village from up to 30 years ago to see how it has changed. Some websites provide data of past services, etc.

Method – Shopkeepers questionnaires
Go into the shops and services and ask the owners how their provision has changed.

Method – Photographs and field sketches
Take photographs and/or draw field sketches of the village.

Theme – Changes in the rural landscape

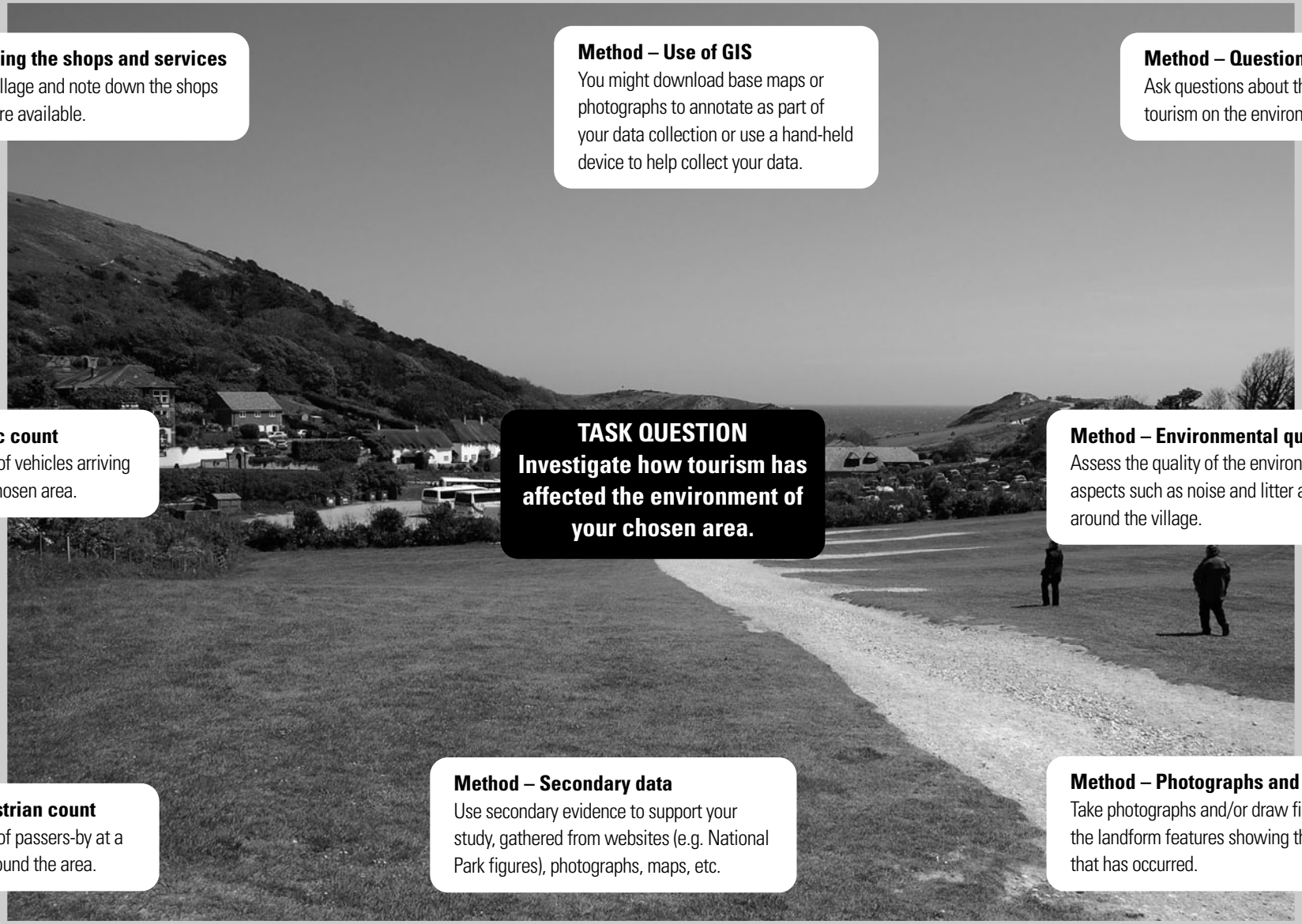
The extract below is part of a student's methodology section on how service provision has changed in a rural area.

> I walked around the village and noted down where the shops and services were on a large scale map of the village...
>
> I had to go down all the roads and even put on things like bus stops which had information about bus times...

In the space below, rewrite this student's response to achieve the top mark band on the mark scheme (see page 16 for the assessment critera). To do this each sentence should contain detailed description and explanation of what is happening and why.

Theme – The effects of tourism

On this page are some methods that could be used to answer task questions for the tourism theme. The following page is part of the methodology section of a student's work. This will give you ideas on how to write up your methods.



Method – Mapping the shops and services
Walk around the village and note down the shops and services that are available.

Method – Use of GIS
You might download base maps or photographs to annotate as part of your data collection or use a hand-held device to help collect your data.

Method – Questionnaires
Ask questions about the impact of tourism on the environment of the area.

Method – Traffic count
Count the number of vehicles arriving and leaving your chosen area.

TASK QUESTION
Investigate how tourism has affected the environment of your chosen area.

Method – Environmental quality index
Assess the quality of the environment against aspects such as noise and litter at certain sites around the village.

Method – Pedestrian count
Count the number of passers-by at a number of sites around the area.

Method – Secondary data
Use secondary evidence to support your study, gathered from websites (e.g. National Park figures), photographs, maps, etc.

Method – Photographs and field sketches
Take photographs and/or draw field sketches of the landform features showing the human erosion that has occurred.

Theme – The effects of tourism

The extract below is part of a student's methodology section on how tourism has affected the environment of your chosen location.

We had to count the number of vehicles that went in and out of Lulworth Cove...

There is only one road into Lulworth so we stood by the side of this road to do the task. The work was shared between the groups with each group doing a 30 minute slot...

The technique was completed on a Friday and a Sunday between the same time slots...

In the space below, rewrite this student's response to achieve the top mark band on the mark scheme (see page 16 for the assessment critera). To do this each sentence should contain detailed description and explanation of what is happening and why.

Theme – Changing land use in urban areas

On this page are some methods that could be used to answer task questions for the urban theme. The following page is part of the methodology section of a student's work. This will give you ideas on how to write up your methods.

Method – Map the land use
Note down how the land is used at different sites around the CBD.

Method – Use of GIS
You could use a hand-held device to download maps and photographs to annotate during the data collection.

Method – Environmental quality index
Assess the quality of the environment against aspects such as noise and litter at different sites around the CBD.

TASK QUESTION
Investigate how and why the Central Business District (CBD) of an area has changed in the last 30 years.

Method – Questionnaire
Ask how and why the CBD has changed over the last 30 years.

Method – Building survey
Note down the use and estimated ages of the buildings.

Method – Field sketches
Display recent changes using photographs and field sketches.

Method – Secondary data
Use secondary evidence to support your study, for example photographs and maps dating back 30 years.

Theme – Changing land use in urban areas

The extract below is part of a student's methodology section on how to delimit the area of your chosen urban area's CBD.

> We had to walk around the CBD noting down on a map the different land uses such as shops, housing and roads...
>
> We only did part of the CBD, other groups did the other bits...
>
> On returning to school we repeated the exercise putting the information neatly onto clean maps...

In the space below, rewrite this student's response to achieve the top mark band on the mark scheme (see page16 for the assessment critera). To do this each sentence should contain detailed description and explanation of what is happening and why.

Theme – Approaches to local sustainable development

On this page are some methods that could be used to answer task questions for the local sustainable development theme. The following page is part of the methodology section of a student's work. This will give you ideas on how to write up your methods.

Method – Map the location of recycling facilities
Note down where paper and glass is collected for recycling in each of the administrative areas.

Method – Questionnaire at the recycling point
This would include questions such as how often people recycle their glass and paper.

TASK QUESTION
Investigate the differences in recycling rates of paper and glass between two administrative areas.

Method – People count
Count the number of people who are recycling paper and glass at different recycling facilities within the two areas.

Method – Questionnaire
Complete a questionnaire of householders within both the areas.

Method – Secondary evidence
Use the website of the two areas to find out their recycling policies. Find census data to learn the socio-economic make-up of the areas.

Method – Use of GIS
You could use a hand-held device to download maps and photographs to annotate during the data collection.

Theme – Approaches to local sustainable development

The extract below is part of a student's methodology section on how to explain the differences in recycling rates of paper and glass between two administrative areas.

> We were dropped off at a supermarket and told to count the number of people who were using the recycling facilities for glass and paper for 30 minutes at 1.00pm...
>
> We were given a tick sheet to fill in. The sheet split the people by broad age bands and by gender...
>
> This was then repeated in the other administrative area...

In the space below, rewrite this student's response to achieve the top mark band on the mark scheme (see page 16 for the assessment critera). To do this each sentence should contain detailed description and explanation of what is happening and why.

Research phase

The Internet can be used to provide secondary data for your study. However, information from the Internet must not be cut and pasted directly into your work – you must put the information into your own words. The only exception to this rule is the maps that you may wish to use in your introduction. You may wish to draw at least one of your maps by hand.

Activity

Use the Internet to:

- find maps to show the location of your study site
- find secondary information about your task question.

What is the difference between primary and secondary data?

Primary data – this is data/information that you have collected yourself or have contributed to in a group activity in the field. This could be a traffic count or a questionnaire.

Secondary data, as part of the research process – this is data/information that has been produced by someone else. This could be information that you have downloaded from the Internet such as maps, census data, old photographs, newspaper articles or data collected by a Local Authority or Water Authority.

How to research successfully on the Internet

Many students waste a lot of time researching on the Internet. There are a few tips to speed up your research:

- About six to eight words in the query is best.
- Combine key words into phrases using quotation marks such as 'paper recycling' because this refines the search.
- Spell carefully and consider alternative spellings, e.g. organisation, organization.
- Google is the main search engine but there are others such as search.yahoo.com.
- Search for synonyms – if you want to look not only for your search term but also for its synonyms, place a (~) in front of the word.
- Wikipedia is always a good starting point for research but be wary and follow the links that it provides.

Notes on websites

Use the following pages to plan how you will carry out the data collection section. First write out your task question and your sub-questions in the boxes below. This will help you to focus your ideas. Remember to make it clear that you are collecting both primary and secondary data.

Task question

Sub-questions

1

2

3

You should include developing risk assessments as part of your preparation for fieldwork, for example by using Google Maps and Google Street View to assess likely hazards and risks.

Hazard – danger that could reasonably be expected to cause harm, e.g. contact with slippery rocks next to a stream.
Impact/severity – how seriously someone might be harmed.
Risk – the chance that someone will be harmed by a particular hazard, e.g. a fall/slip or trip.

A *Risk Rating* can be developed, based on *likelihood* and *severity* (or worst-case outcome). For example, whilst working in a river the likelihood of slipping on wet rocks may be described as 'infrequent' (a score of 3/5), whilst the severity could be 'cuts to hands and knees' (a score of 3/5). These two together give a risk-rating score 9/25 (3 × 3), which would indicate that a control should be in place to minimise the chance of injury through slipping.

Risk assessment

Technique	**Methodology** Think carefully about how you will carry out your techniques.	**Problems and limitations** How useful were your techniques? What problems occurred? Jot down ideas here. This must be finalised under a high level of control.
Primary data		
Secondary data		

4 Methods of presenting data

How will my work be marked?

This section of the controlled assessment is to be written up under limited control – see page 5.

Your teacher may advise you on a range of ways to display your data.

You should try to use a range of appropriate techniques. To achieve a higher mark range, some of these techniques will need to be sophisticated: e.g. proportional pie charts.

Assessment criterion c – methods of presenting data	
Mark range	**Descriptor**
0	There is no evidence of data presentation.
1–4	A limited range of basic presentation techniques is used. The methods used are usually not appropriate.
5–8	A range of mainly appropriate data presentation techniques is used. Techniques are well presented, with scales and titles present on most techniques. At the top of this level, some of the techniques should be more sophisticated.
9–11	A wide range of presentation techniques is used, which is well presented and appropriate. Techniques are well presented, with scales and titles present on most techniques. A number of the presentation methods will be more sophisticated.

Activities

Use the space provided to list and define the key terms you are going to use.

You should use the tick list to ensure that your 'methods of presenting data' section has all the necessary ingredients.

Key terms

Methods of presenting data (11 marks)	Tick when completed
I have used a range of graphical techniques, e.g. line graphs, bar charts.	
I have used a range of cartographic techniques, e.g. annotated locations maps, chloropleth maps, flow line maps. (These are usually classed as more sophisticated techniques.)	
I have used visual techniques, e.g. photographs, field sketches. (If well annotated these are classed as more sophisticated techniques.)	
I have checked that I have labelled axis on all of my graphs.	
I have checked that all my presentation techniques have a title.	
I have drawn my presentation techniques neatly.	
My presentation techniques are appropriate for the data collected.	

The work for this section of the controlled assessment is carried out under limited control – see page 5.

You will need to spend about six hours on your data presentation.

When you return from the data collection day, you should collate any data that you collected as part of a group, so that you have a complete set of information. This is best presented as a series of tables. You can either produce your tables using an Excel spreadsheet or construct them by hand. If you use an Excel spreadsheet you can convert it into different types of graph.

Understanding the mark scheme

If there is no data presentation of any kind in your controlled assessment you will not be given any marks for the data presentation section.

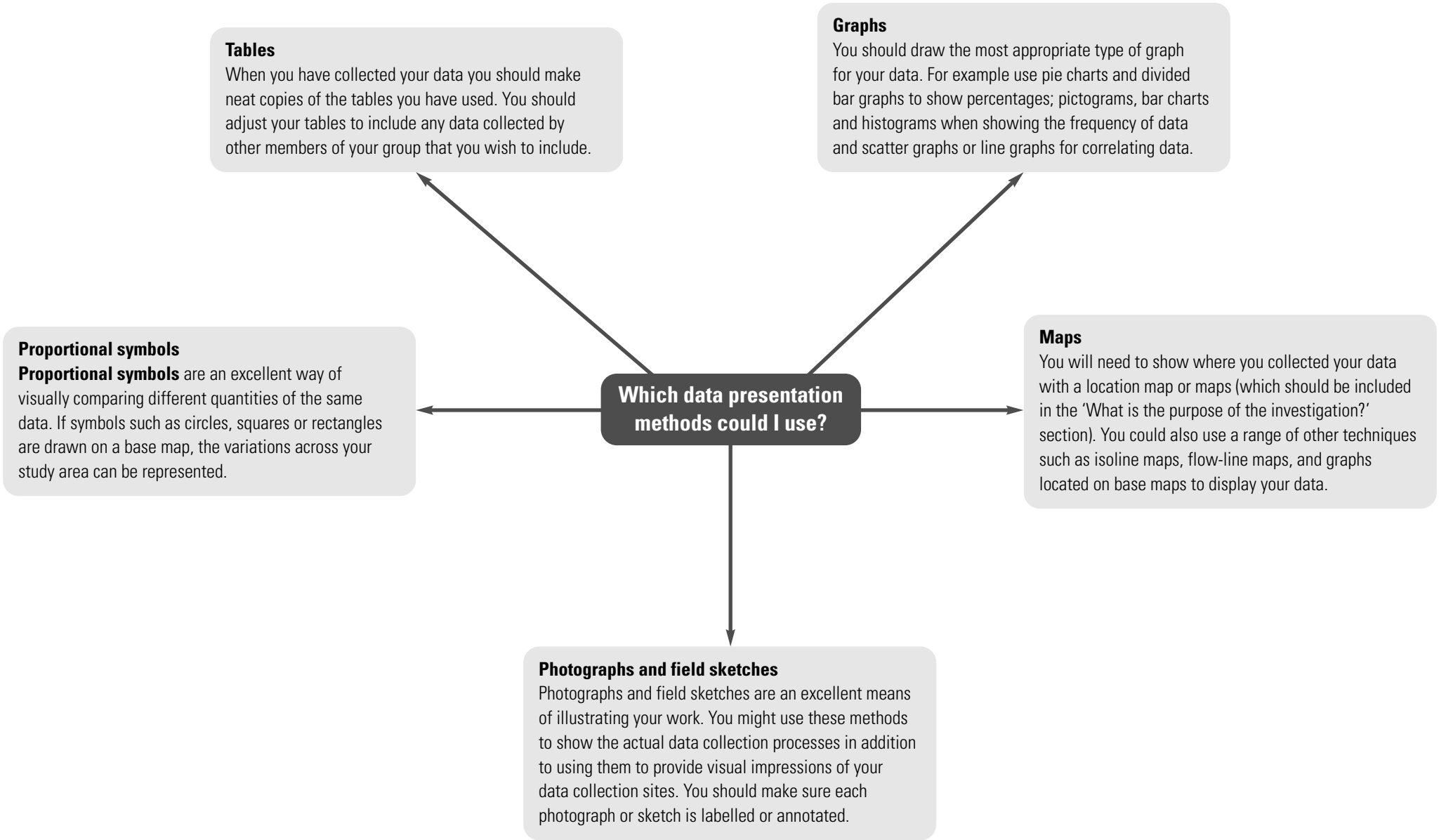
If you have some data collection methods, such as data collection tables and one or two basic methods such as bar charts, you will be given between one and four marks.

You may have a wider range of data presentation methods that are not appropriate for the data you have collected, for example you may have incorrectly used a line graph. Again you will be given one to four marks.

If you use a range of at least three different methods to present your data and remember to give each of these a clear title, use scales on any maps you draw and label the axes of your graphs you will be given between five and seven marks.

If you use a range of methods and one of your methods is more complex (sophisticated), such as a very well annotated photograph and a graph located on a base map, you will be awarded up to eight marks.

Data which is neatly presented using a wide range of methods, each with a clear title, including scales on maps and field sketches and with the axes of all graphs correctly labelled, will be given a mark of between nine and eleven providing three of these methods are more sophisticated.


Which data presentation methods could I use?
Tables
When you have collected your data you should make neat copies of the tables you have used. You should adjust your tables to include any data collected by other members of your group that you wish to include.
Graphs
You should draw the most appropriate type of graph for your data. For example use pie charts and divided bar graphs to show percentages; pictograms, bar charts and histograms when showing the frequency of data and scatter graphs or line graphs for correlating data.
Proportional symbols
Proportional symbols are an excellent way of visually comparing different quantities of the same data. If symbols such as circles, squares or rectangles are drawn on a base map, the variations across your study area can be represented.
Maps
You will need to show where you collected your data with a location map or maps (which should be included in the 'What is the purpose of the investigation?' section). You could also use a range of other techniques such as isoline maps, flow-line maps, and graphs located on base maps to display your data.
Photographs and field sketches
Photographs and field sketches are an excellent means of illustrating your work. You might use these methods to show the actual data collection processes in addition to using them to provide visual impressions of your data collection sites. You should make sure each photograph or sketch is labelled or annotated.

Activity

A student included these data presentation methods in their controlled assessment for the Urban theme.
There is a photograph of a data collection site, a bar graph and a map showing the general location. These all have titles.
Use the mark scheme on page 34 to decide if these are basic or sophisticated data presentation methods.

Think of two ways the student could improve these data presentation methods.

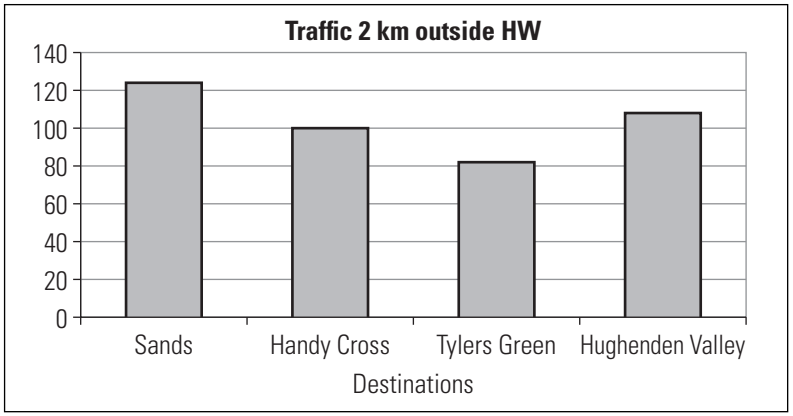
1. _____

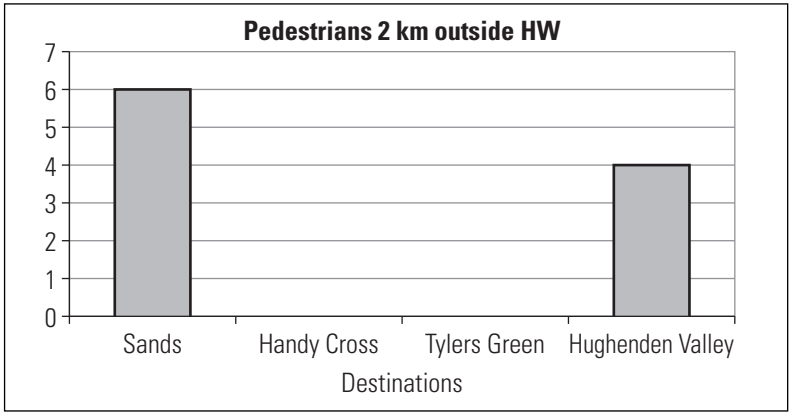
2. _____

Where I collected my data

Map to show where my urban area is

My graphs





Do I have to use a computer for my data presentation?

The 'methods of data presentation' section does not require you to use a computer to obtain maps or to construct tables and graphs. The most important considerations are that:

- your work is well presented
- you remember to give each data presentation technique a title
- you remember to add scales to maps and labels to the axes of graphs.

However, using a computer can be very helpful in making sure that your work is well presented. For example hand drawn maps of your data collection area can take a long time to complete and may not be as neat as one obtained from a website such as Streetmap or Google Earth. You can produce graphs using a package such as Excel, again these may be quicker to draw and neater than those you construct by hand.

I would like to hand draw my data presentation methods.

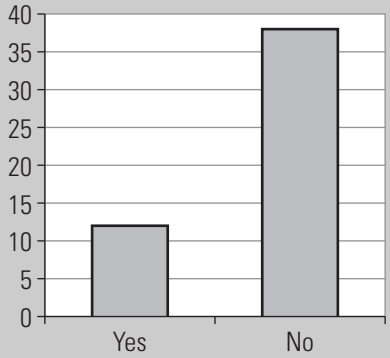
Some students enjoy drawing maps and graphs by hand. If you decide to do this, it is a good idea to photocopy a base map of your data collection area so that you can add additional information such as graphs, charts and photographs. This will help you to reach a higher level in the mark scheme because you have used some sophisticated data presentation techniques.

Activity

A student created this bar chart using Excel.

- Is the bar chart a basic or sophisticated method of data presentation?
- What would you need to add to the bar chart to get a higher mark?

Write your answers in the space provided on the right.



Does the local council provide enough recycling?

Is this bar chart a basic or sophisticated method?

More sophisticated techniques

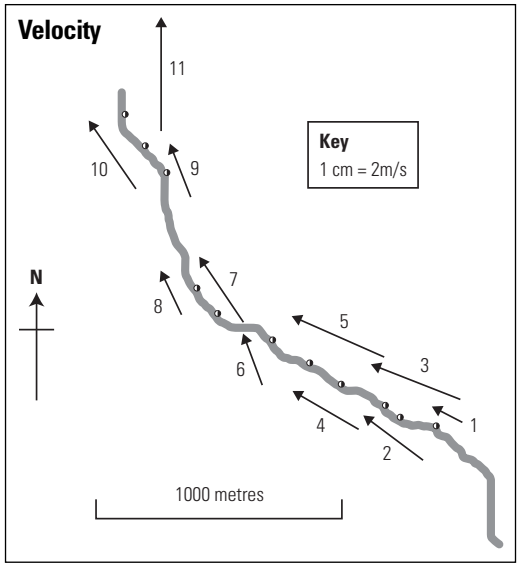
Generally, if you use more complicated, innovative techniques in your data presentation section you *could* get more marks. However, the techniques must be appropriate and show something more than a simple technique could show. Pie charts, for example, can be made more sophisticated by locating them onto a base map (e.g. using GIS) or by making their size proportional to the relevant totals.

Whatever technique you choose, it needs to be clear and easy to understand. It is tempting to use as many different presentation techniques as possible – but this is not a good idea if the different types of graphs and charts don't actually help to make things clearer.

Activity: Graphical techniques

Decide which of the graphical techniques below are relevant to your controlled assessment. Then, in the space on the right, explain how they are constructed and list their advantages and disadvantages.

- Kite diagrams
- Compound and block bar charts
- Choropleth maps
- Triangular graphs
- Scaled cross-sections of rivers, valleys or landforms
- Desire lines, flow lines and star diagrams
- Isoline maps



Tip

Work awarded the highest marks for data presentation normally follows these rules:

1. The 'independent variable' (e.g. time) is plotted on the horizontal (*x*) axis and the 'dependent variable' is plotted on the vertical (*y*) axis. Also, the controlling variable should be on the *x* axis.
2. Scales are clear and labelled, allowing the full range of data to be plotted.
3. Graphs have a full, explanatory title.
4. Graphs with multiple lines or data use different colours and symbols for clarity (and may have two vertical axes).

Graphical techniques

Technique	How to construct	Advantages/ disadvantages

Photographs and field sketches

Why should you include photographs and field sketches?

Both photographs and field sketches are very helpful because they provide visual impressions of:

- the sites where you collected your data
- how you collected your data
- factors such as environmental quality, building heights and traffic, which are difficult to describe.

What information should you add to your photographs and field sketches?

You should always add the following:

- a title
- the location
- labels which point out the most important features.

You should try to include:

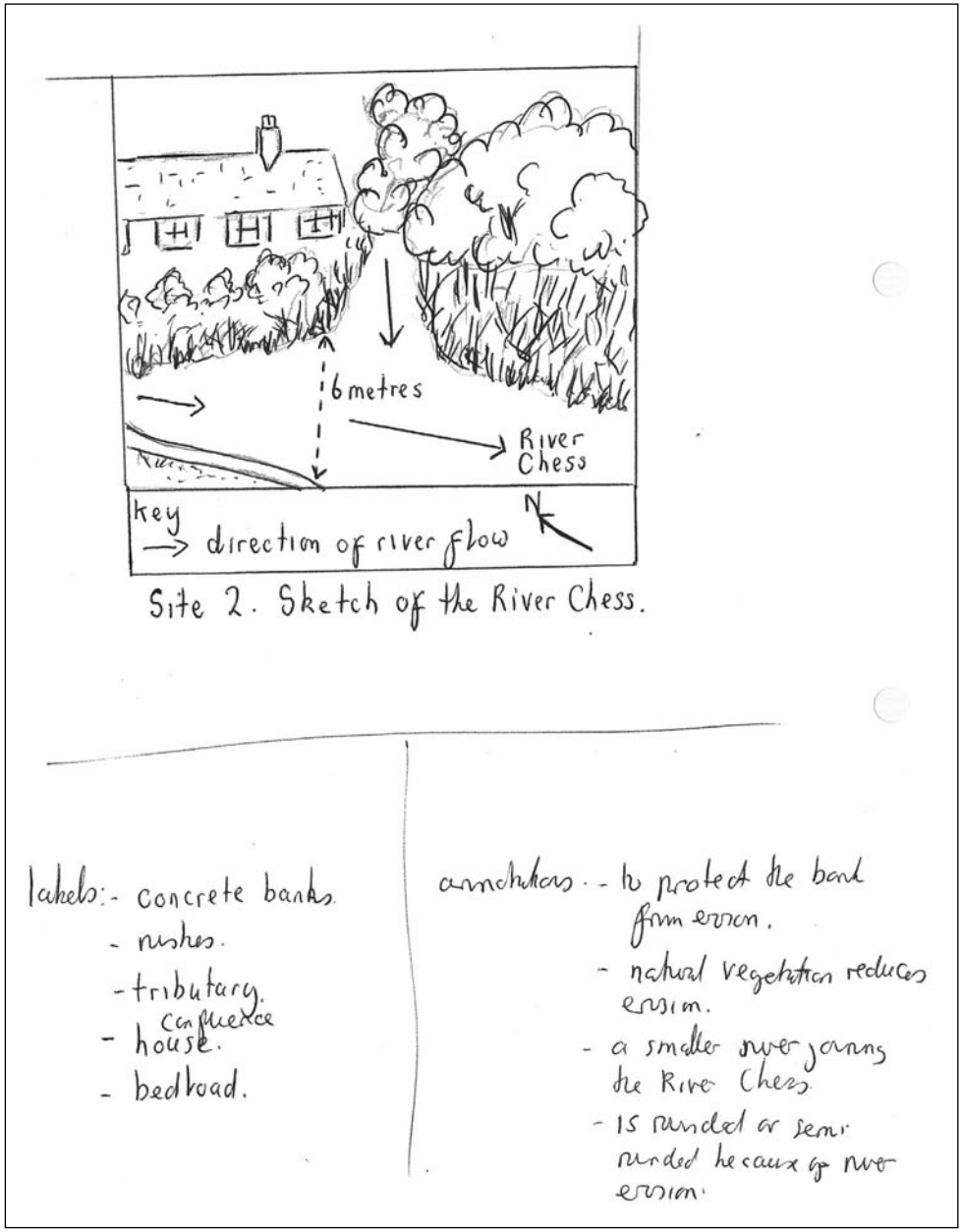
- a compass direction
- a scale
- annotations which give detailed information about the most important features.

Notes

How to use your field sketches

Labels

- river banks
- rushes
- tributary
- **confluence**
- house



Annotations

- where a smaller river joins the River Chess
- re-enforced with concrete to reduce river erosion
- natural vegetation which reduces erosion

Activity

Add the labels to the sketch of the River Chess.

Use the mark scheme to help you decide if the labelled sketch is a basic or sophisticated data presentation method.

Add the **annotations** to the relevant labels.

Why would the field sketch with annotations be marked as a sophisticated method of data presentation?

Activity

Draw a neat copy of one of your field sketches in the box below.

- Remember to give your sketch a title.
- Add as many relevant labels and annotations as you can.

Use the mark scheme to help you decide if your sketch is a basic or sophisticated data presentation method.

Try to think of how you might improve your sketch (remember you are allowed to talk about this with your teacher).

Photographs

Activity

This photograph was taken by a student as part of their data collection for the Coast theme. The student has added some labels to the photograph.

Coastal management at Minehead
(Courtesy of Ahsan Abbas)

Use the mark scheme to help you decide if the labelled photograph is a basic or sophisticated data presentation method.

I think the labelled photograph is a ..... method because

Add some detailed annotations to the photograph.

I think the annotated photograph is a ..... method because

Activity

The photographs and the table of information were collected as part of the changes in rural landscape theme.

Suggest three ways that these presentation methods might be improved to make them more sophisticated data presentation methods.

1. _____

2. _____

3. _____

The village shop (Hambledon village)

This used to be the village baker's shop (Hambledon village)

Service	1995	2009
Village shop	/	/
Public house	/	/
Garage (car repairs)	/	/
Butcher	/	
Bakers	/	

Photographs	**What information should I add to my photographs?**	**Problems and limitations** How useful and relevant is this photograph? Jot down ideas here. These ideas must be finalised a under high level of control.
Field sketches	**What information should I add to my field sketches?**	**Problems and limitations** How useful and relevant is this sketch? Jot down ideas here. These ideas must be finalised under a high level of control.

Maps

You will have already used a map or series of maps to show where you carried out your data collection.

However, you should also think about using maps as a method to present your data.

Maps could be used to:

- show spatial **distributions**, for example graphs can be drawn onto a base map of a river valley to show the differences such as the variation in the river's load at a number of sites
- show distances, for example how far people travel to reach an urban area
- show the different land uses in an urban or rural area
- include labels or annotations that give more information about the area.

What should you include on your map?

A map should always have:

- a title
- a scale
- a north arrow
- a key which explains the meaning of any symbols you use.

Activity

Think about the types of map you might want to use as part of your data presentation.

Think about where you might get your maps.

Write your ideas down in the space provided on the right.

Types of maps

I will get my maps from

Activity

Draw a neat copy of one of the maps you intend to use in the box below.

- Remember to give your map a title.
- What else should you add to your map?

Use the mark scheme to help you decide if your map is a basic or sophisticated method of presenting your data.

How might you improve your map? Remember you are allowed to talk about this with your teacher.

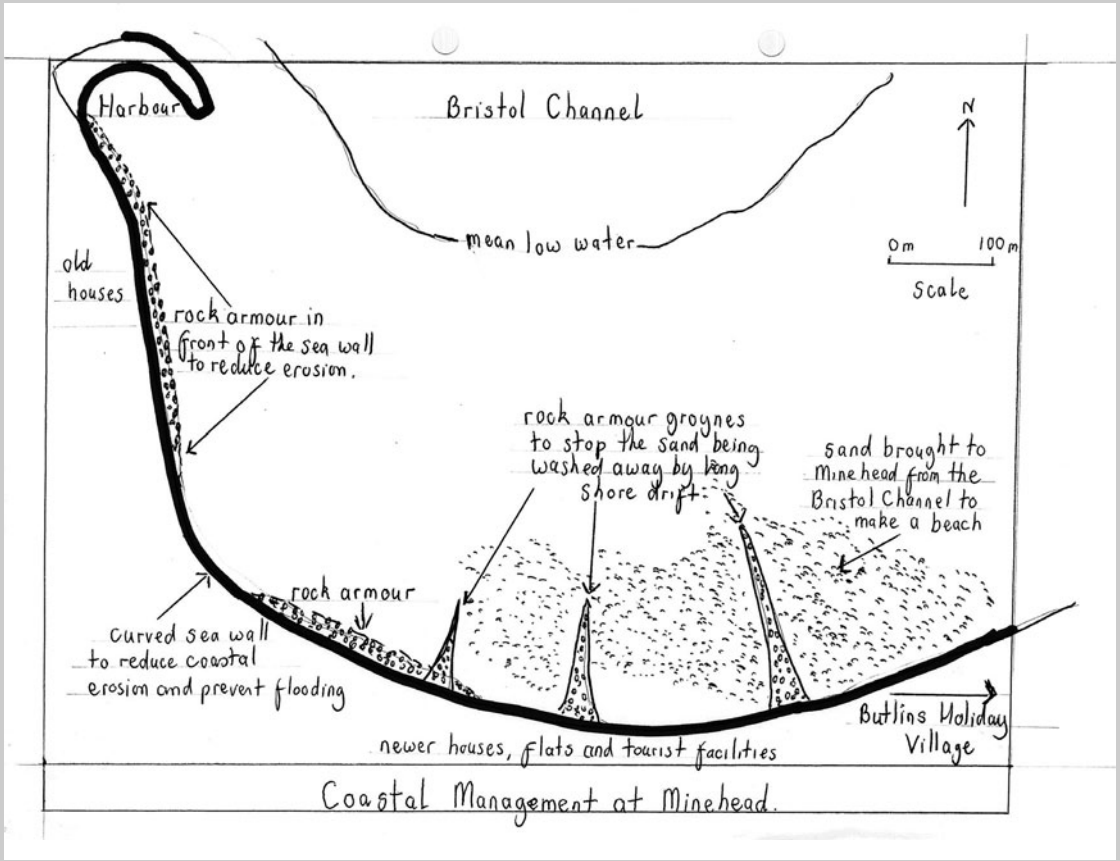
Activity

This map was drawn as part of the data presentation section for the Coastal theme.

- Do you think the map is a basic or sophisticated data presentation method? Why?

The map shows the same area as the photograph on page 43.

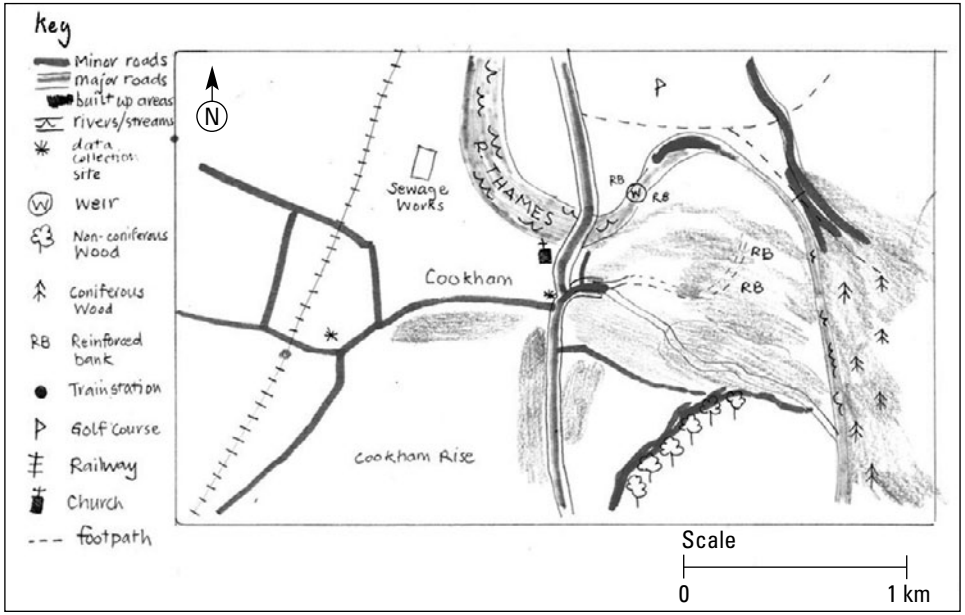
Use the information on the map to add some extra annotations to the photograph.



Notes

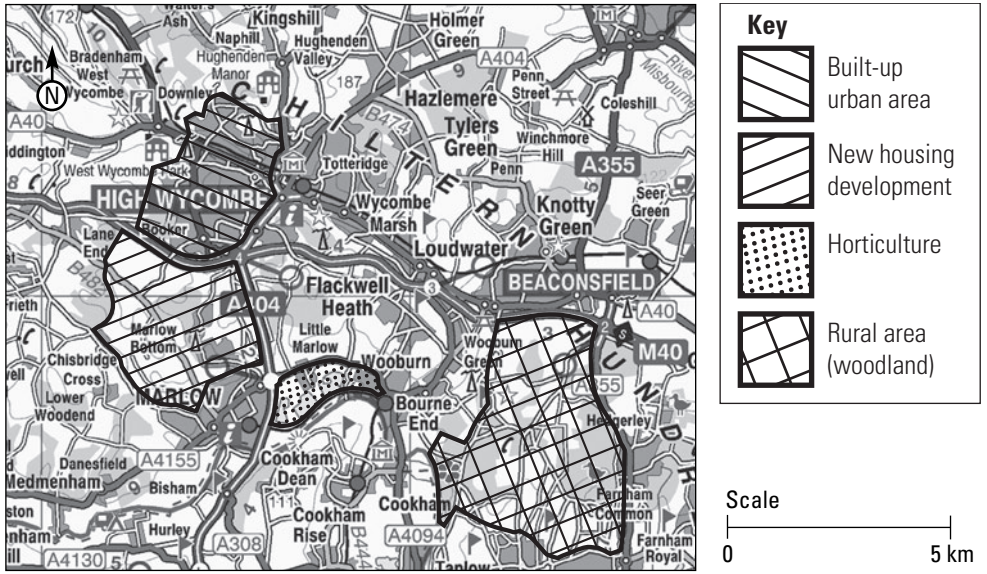
Land use maps

Cookham, Berkshire – rural land use



Map 1 (hand drawn)

High Wycombe, Buckinghamshire – land use



Map 2 (drawn on a printed base map)

Activity

Both the maps show the land uses in different areas.

Complete the table to explain the advantages and problems of using these methods.

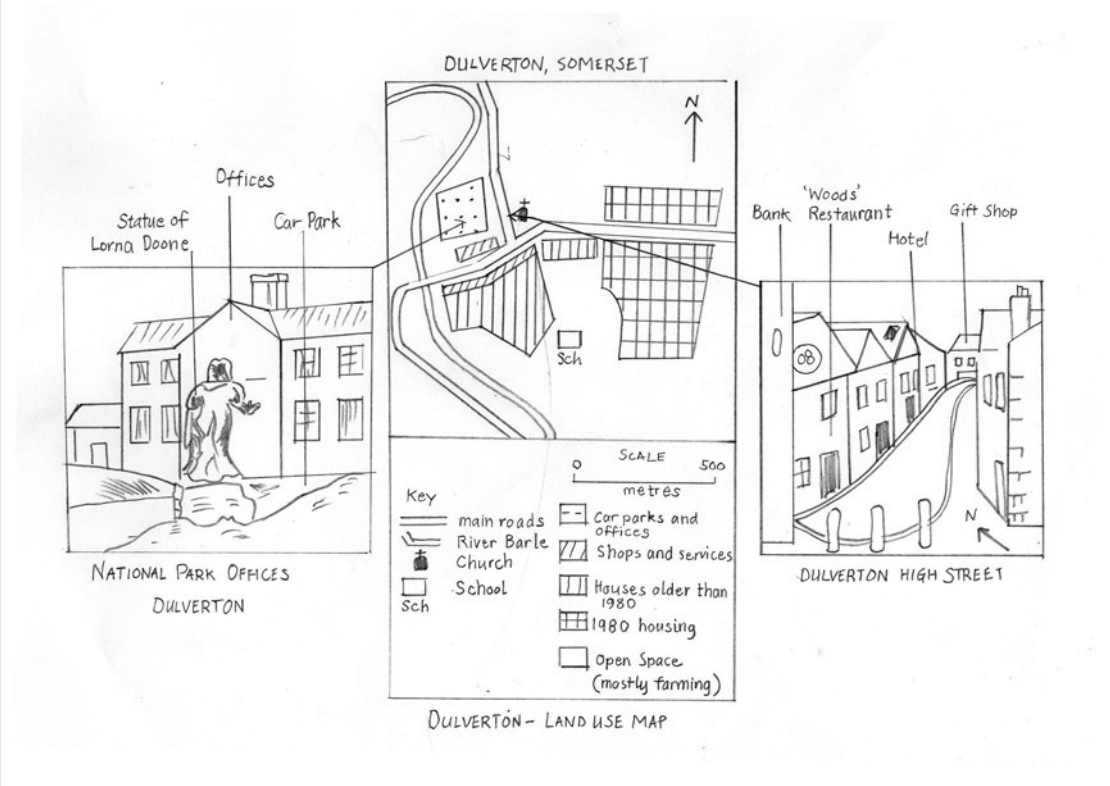
	Map 1	Map 2
Advantages	• •	• *Quick to draw* •
Problems	• *Needs to be very neat* •	• •

Activity

This map and field sketches were drawn as part of the data presentation section for the Change in rural environments theme.

- Is this a good way of presenting the information?
- How might you improve this data presentation method?
- How could you make this a sophisticated data presentation method?

Write your answers in the notes section provided on the right.

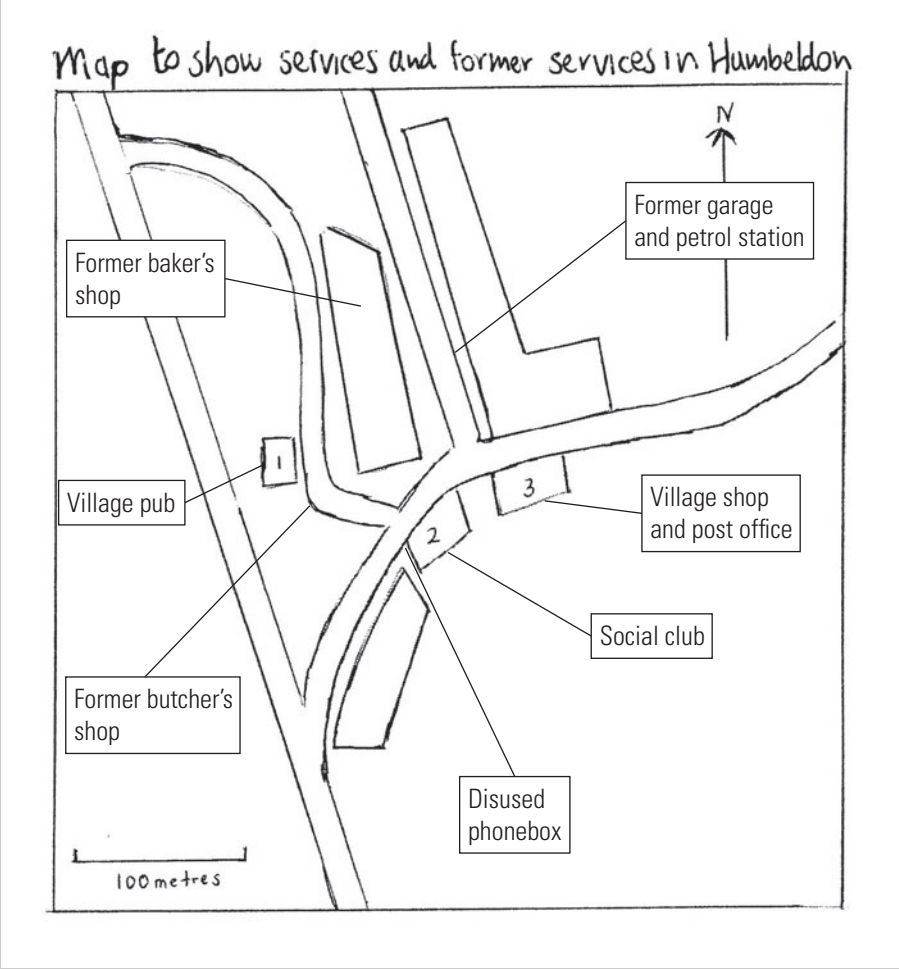


Notes

Activity

This map shows the same village as the photographs on page 44.

The buildings labelled 1, 2 and 3 are shops and services. The other buildings are houses. The rest of the area is either farmland or open spaces.



Use colours and add a key to the map.

Why do you think this improves the map? Write your answer in the space provided on the right.

Why do you think using a key might improve a map?

Maps What types should I use?	**What information should I add to my maps?**	**Problems and limitations** How useful and relevant is this map? Jot down ideas here. These ideas must be finalised under a high level of control.

Proportional symbols

If **proportional symbols** are used correctly as part of your data presentation, this method will probably be a sophisticated method of showing your data.

What are proportional symbols?

These are shapes, usually circles or squares, which are drawn in proportion to the size of the value that they are used to represent. Therefore the biggest symbol will show the highest value and the smallest symbol the lowest value.

Proportional symbols are an excellent way of showing information that you have collected at exact locations such as the number of cars travelling past a data collection site.

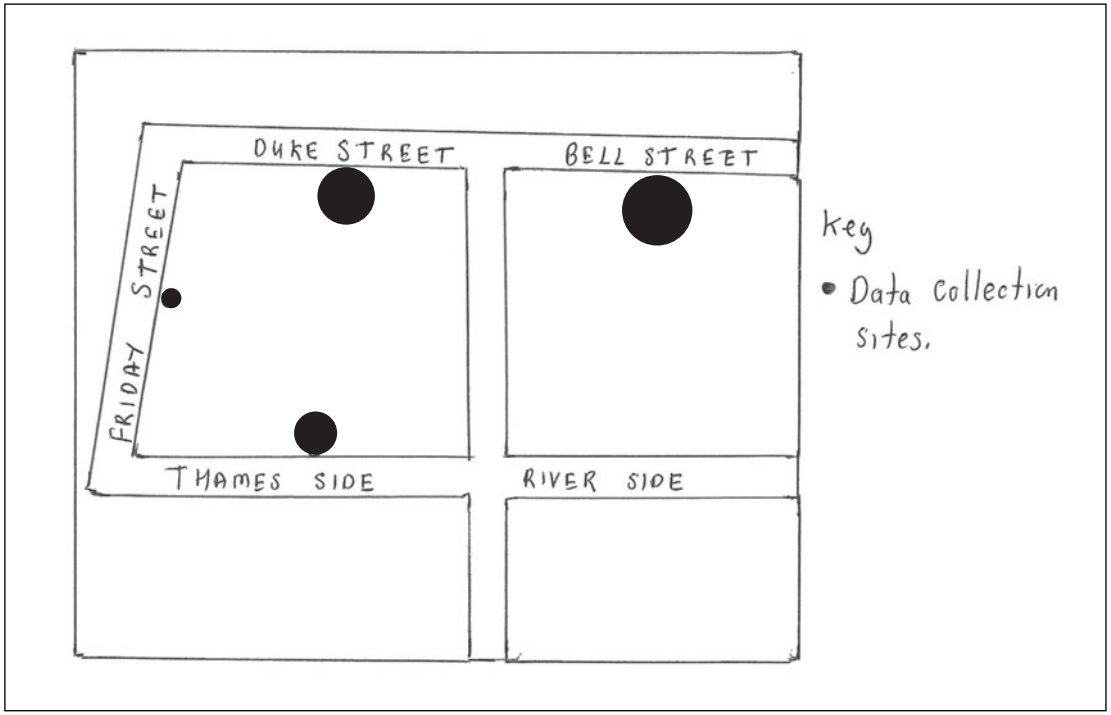
How to draw proportional symbols

Find the square root of the value you want to plot. For example, if you have counted 16 people walking along a street the square root of 16 is 4. The square root value of 4 is used to decide the length of the sides of square symbols, or to determine the radius of a circle.

Activity

Complete the pedestrian count proportional symbol map by adding the information in the box.

How might your completed map be improved?



Street name	Number of pedestrians	Square root
Friday street	2	1.4
Thames side	9	3.0
Bell street	24	4.9
Duke street	16	4.0

My map could be improved by...

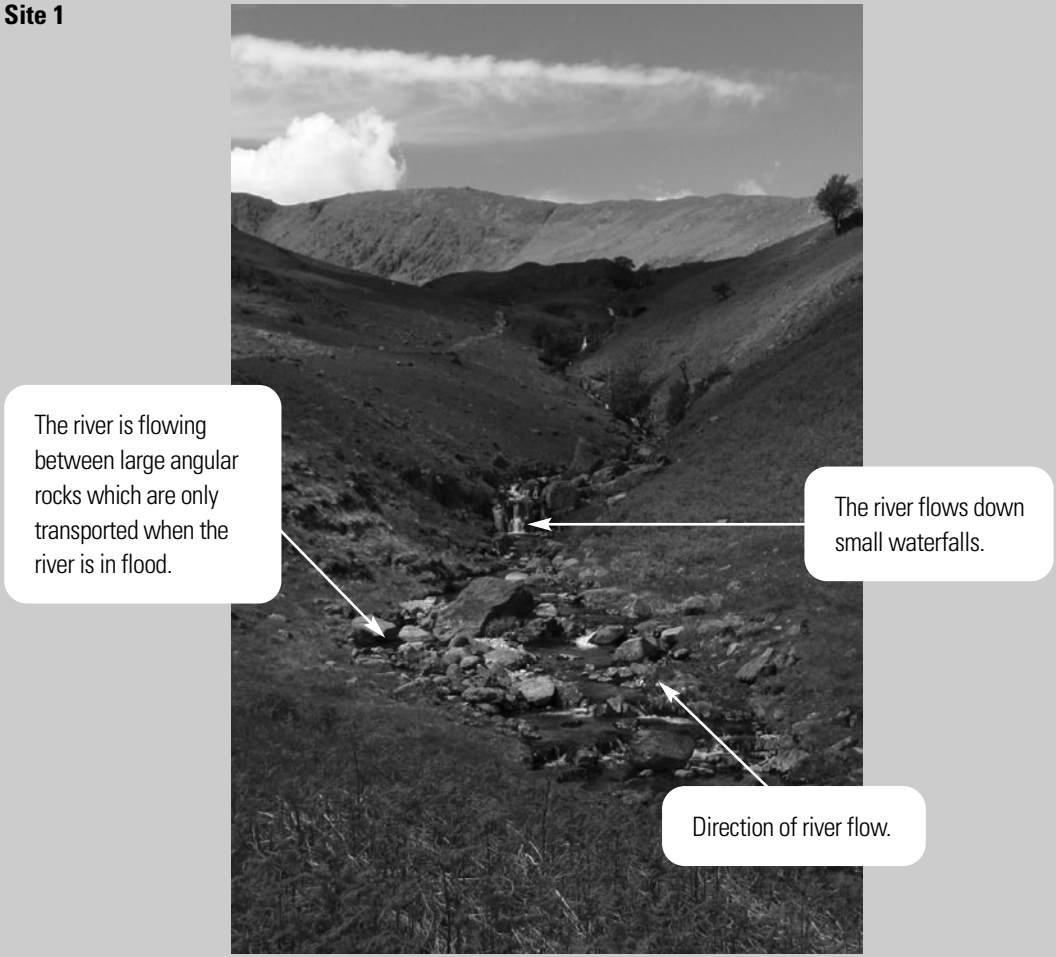
How can I improve my data presentation?

You can improve your data presentation in two ways:

- use a variety of suitable data presentation methods (try to use between three and five different techniques)
- use two or three sophisticated methods to present your data.

For example, an investigation for the River theme might include a photograph of a data collection site. The photograph, with a title which locates it, would be worth some credit. However, labels, similar to those on the right-hand side of the photograph, which describe the site, would be given more marks. The highest marks would be given for detailed annotations – one of these is given as an example on the left hand-side of the photograph.

Site 1

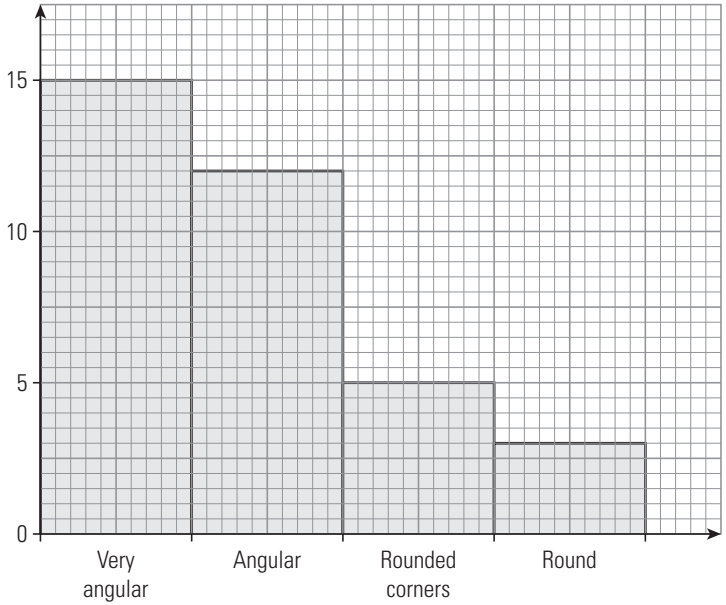


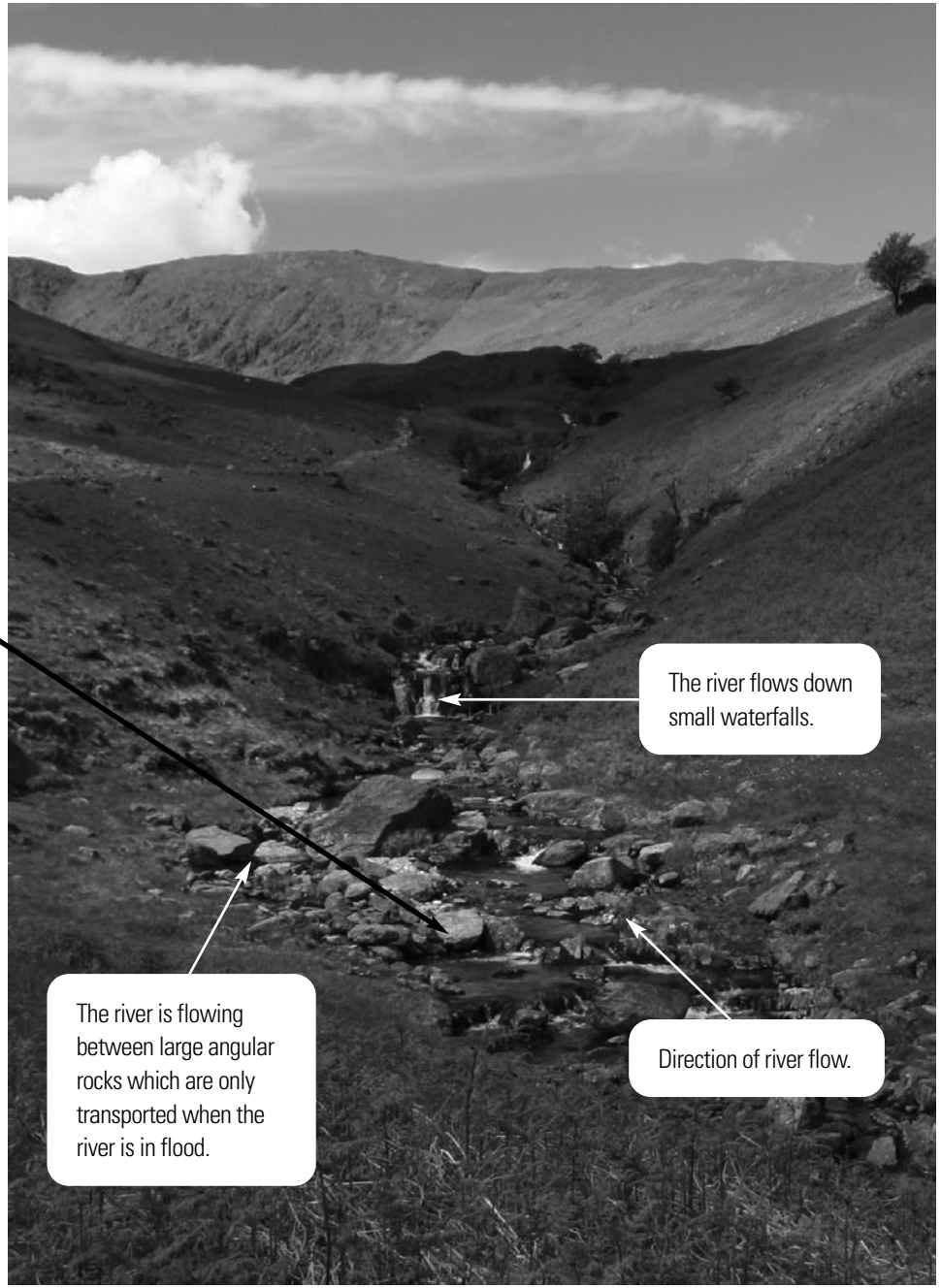
The shape of rocks at site 1

Very angular	Angular	Rounded corners	Round
15	12	5	3

The table, above right, gives information about the rocks deposited by the river at this site. Presenting the information in a table would receive some credit, but if the data is plotted as a graph the data is easier to interpret and would receive more marks. The combination of an annotated photograph, a table and a graph provide some excellent detail about the river at site 1, and would receive high credit for data presentation.

Three simple ways of representing data, but linking them together makes them more sophisticated.





Data presentation

The data presentation techniques on pages 36 to 55 are designed to help you select and develop some ideas for each of the themes.
There are a number of additional data presentation techniques that you could use and some suggestions are shown on the next pages.
Remember you must try to make any data presentation techniques you choose as sophisticated as possible.
Always make sure your techniques have appropriate titles, scales, directional arrows, keys and annotations.
Here is a range of appropriate graphical techniques.

Suggested data presentation methods	Tick if used	Notes
Beach profile diagrams		
Histograms		
Line graphs		
Compound bar graphs		
Your own ideas		

Suggested graphical skills	Tick if used	Notes
Channel cross sections		
River valley cross sections		
Pictograms		
Flow lines of traffic movements		
Flow lines of bus routes		
Scatter graphs		
Your own ideas		

Suggested mapping skills	Tick if used	Notes
Located flow line graphs		
Land use maps		
Overlay maps showing car parks in a CBD		
Sketch maps to show recycling facilities		
Your own ideas		

Data presentation checklist

Data presentation method	What did I use this method of data presentation to show?	Why I have used this technique
Graphs – I have used these types of graph		
Proportional symbols		

Data presentation checklist

Data presentation method	What did I use this method of data presentation to show?	Why I have used this technique
Other presentation methods		
Other presentation methods		

5 Analysis and conclusions

How will my work be marked?

This section of the controlled assessment is to be written up under a high level of control.

This means:

- Your teacher or another adult who represents the school must be present at all times and that you cannot take your work home.
- Your work must be handed out at the beginning of a lesson and collected in at the end.
- You must do all of the work yourself. Your teacher can help you with the skills of analysis and show you how to write a conclusion.
- Your teacher is not allowed to proof read your work.

Assessment criterion d – analysis and conclusions	
Mark range	**Descriptor**
0	There is no analysis or conclusion.
1–3	Data has been extracted and described. Some basic conclusions have been drawn which vaguely relate to the question or issue investigated.
4–6	Data is described in some detail with analytical comments. Plausible conclusions are reached using the evidence, which is presented in the investigation report.
7–9	There are analytical comments, which draw together the student's findings. The conclusions are accurate and substantiated and refer to the correct theory where appropriate.

Activities

Use the space provided to list and define the key terms you are going to use.

You should use the tick list to ensure that your 'analysis and conclusions' section has all the necessary ingredients.

Key terms

Analysis and conclusions (9 marks)	**Tick when completed**
I have described my results in detail.	
I have included evidence such as data in my description.	
I have made analytical comments.	
I have drawn together my findings and made comparisons between the graph/results.	
I have answered all of my **sub-questions** and the main task question.	
I have used evidence from my study when I answered the task question and sub-questions.	
I have referred to a theory where it is appropriate.	

In the analysis and conclusions section of the study you are not allowed to work with anyone else and your teacher is only allowed to help you with the skills of analysis and concluding. They are not allowed to mark your work and give it back with corrections. You are not allowed to take your work home but must hand it in at the end of every lesson. If you are doing the work on a computer it must be secured so that you can only access yours when a teacher is present. You can have with you the rest of the controlled assessment sections – the purpose of the investigation, the methods of data collection, the methods of data presentation and any notes you have made.

This section of your study is worth nine marks. These marks can only be achieved if both your analysis and conclusions reach the standard of the top mark band. Below are the criteria for full marks.

A top mark band analysis should include the following:

- The results are described in detail using data taken from the graphs.

This means that you have written about all of your data presentation techniques. You have included in the description evidence from the graphs such as the number of people in a certain age group in a questionnaire or the number of vehicles which passed you during a traffic count.

- The results should be explained with analytical comments which draw together the student's findings.

This means that you have tried to give reasons for the results you have obtained. These could be linked to a theory, for example the results of a river characteristics study could be explained by the Bradshaw model.

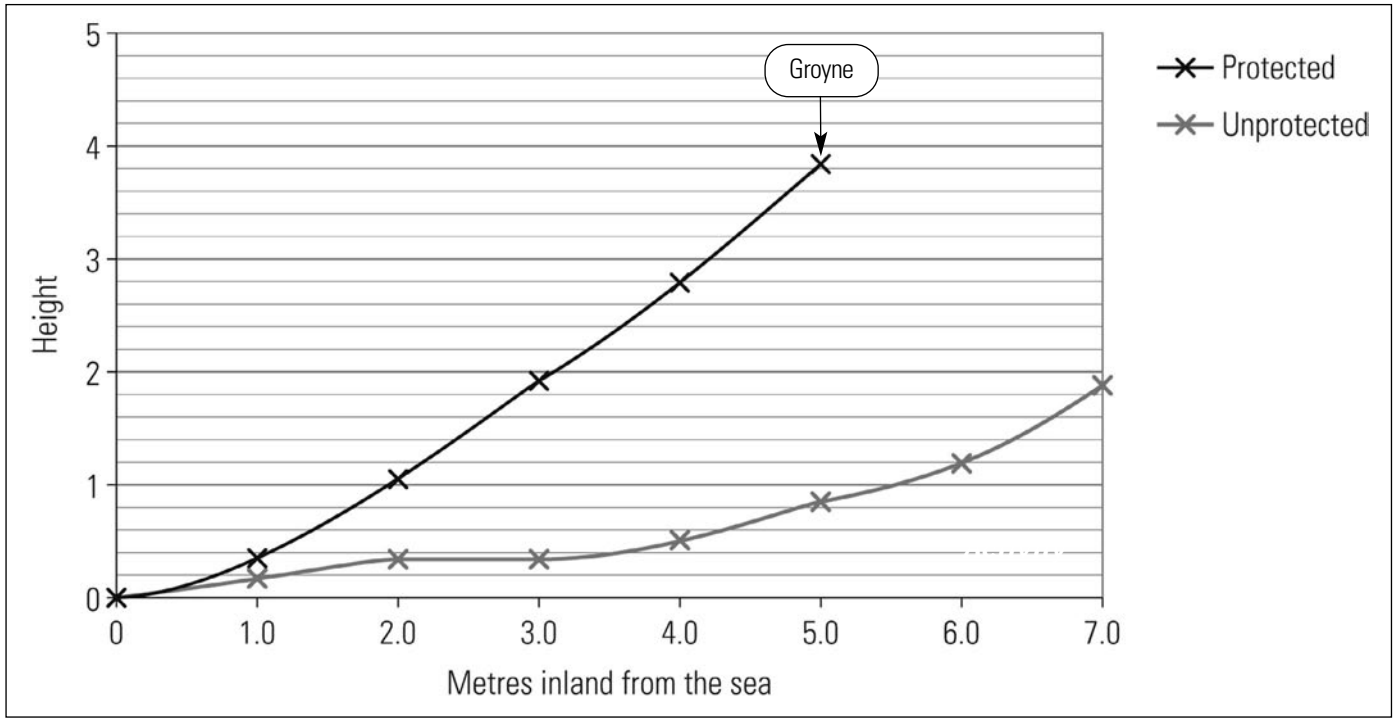
- Linkage made between data sets.

This means that you have used one set of results to back up another set of results. For example, the results of a pedestrian count and the results of a traffic count to explain the environmental quality of an urban area.

- Statistical techniques can be included to enhance but are not necessary for full marks.

Scattergraphs could be used on the data to determine correlation. They can enhance the data analysis section.

Beach profiles



Analysis

We did beach profile 1 where the beach had not been protected.

We did beach profile 2 where the beach had been protected.

Beach profile 2 is much steeper than beach profile 1.

Comments

There is some description of the graph but no data has been extracted. There are no analytical comments. The technique has not been linked to any of the student's other findings, therefore it is a very weak analysis.

Results of Environmental Quality Analysis carried out at five places in Henley.

Duke Street

	1	2	3	4	5	
Quiet				✓		Noise
No litter			✓			Litter
No congestion				✓		Congestion
Traffic management			✓			No traffic management
No parked cars					✓	Parked cars

This shows the results of the EIAs that I carried out and where I carried them out in Henley.

Hart Street

	1	2	3	4	5	
Quiet					✓	Noise
No litter			✓			Litter
No congestion				✓		Congestion
Traffic management		✓				No traffic management
No parked cars				✓		Parked cars

This map is from Ordnance Survey, of the main roads in Henley.

500m ⟷ 3.5cm = 500m

Market Place

	1	2	3	4	5	
Quiet		✓				Noise
No litter		✓				Litter
No congestion				✓		Congestion
Traffic management			✓			No traffic management
No parked cars		✓				Parked cars

Reading Road

	1	2	3	4	5	
Quiet					✓	Noise
No litter			✓			Litter
No congestion					✓	Congestion
Traffic management				✓		No traffic management
No parked cars			✓			Parked cars

Henley Bridge

	1	2	3	4	5	
Quiet					✓	Noise
No litter	✓					Litter
No congestion				✓		Congestion
Traffic management		✓				No traffic management
No parked cars	✓					Parked cars

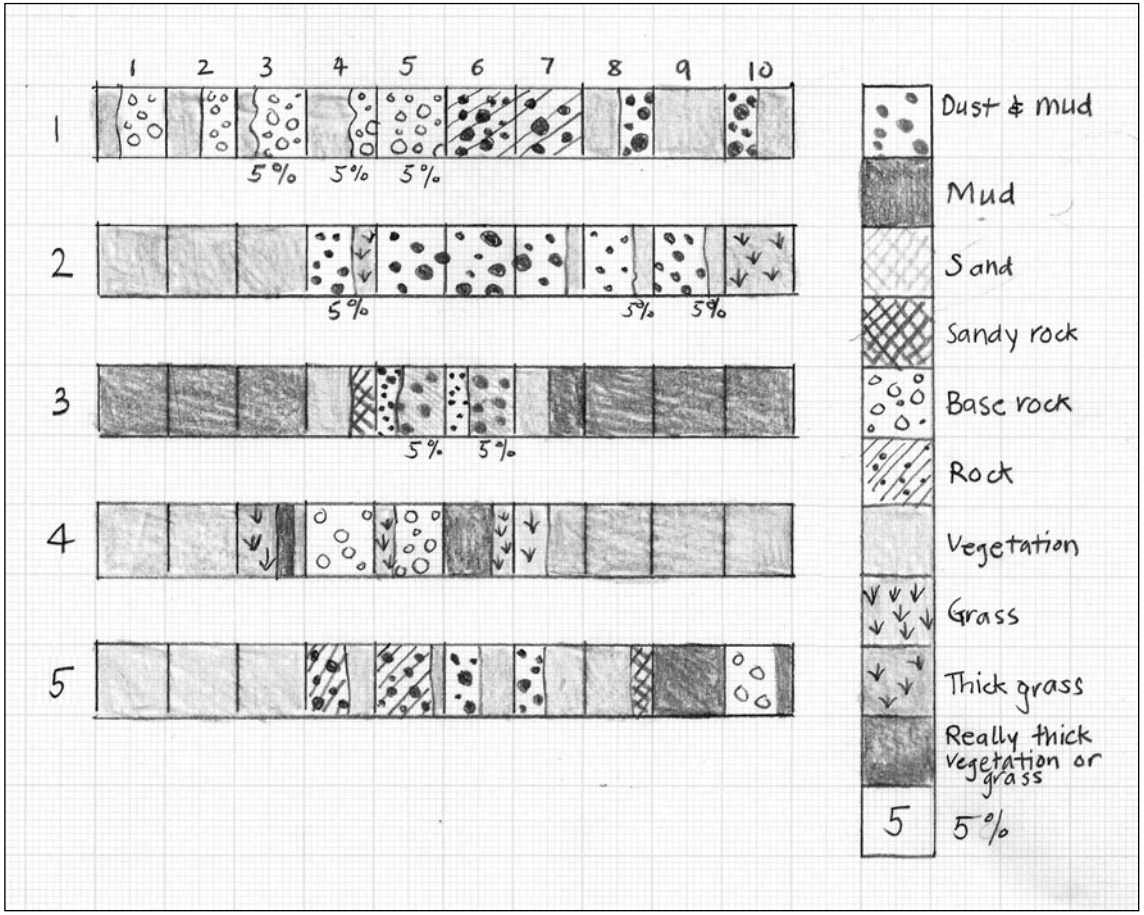
My analysis

Activity

- Write an analysis for each graph. Refer back to page 59 for hints on how to achieve the top band marks.
- Swap your work with a partner.
- Write a comment on your partner's analysis.

Partner's comments on my analysis

Graph of the footpath survey carried out at Durdle Door.



Partner's comments on my analysis

Activity

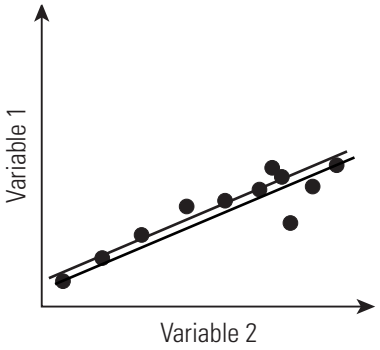
- Write an analysis for each graph. Refer back to page 59 for hints on how to achieve the top band marks.
- Swap your work with a partner.
- Write a comment on your partner's analysis.

My analysis

Scattergraphs

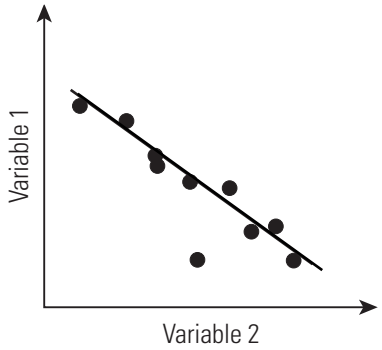
Another way of analysing data is a scattergraph. A scattergraph shows if there is a relationship between two sets of data. Therefore it can be used to discover if two sets of variables are related to one another. After plotting the variables a line of best fit should be drawn on the graph. This assesses the strength of the relationship between the variables as explained below.

Positive correlation



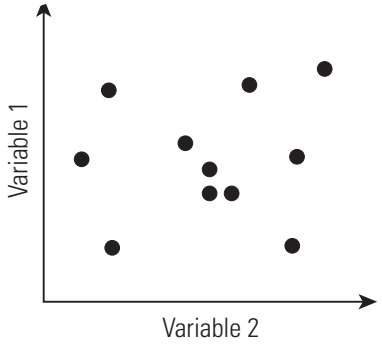
The line of best fit stretches from the bottom left to the top right of the graph. This indicates a positive correlation. As one variable increases, so does the other variable.

Negative correlation



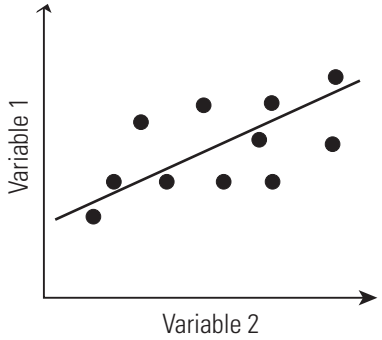
The line of best fit stretches from the top left to the bottom right of the graph. This indicates a negative correlation. As one variable increases, the other variable decreases.

No correlation

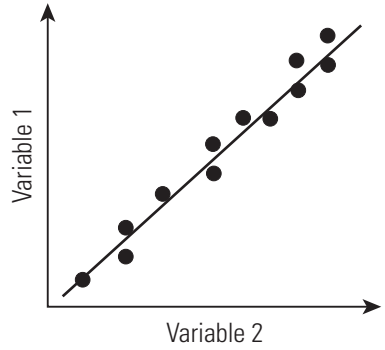


The points are distributed all over the graph. This shows that there is no relationship between the variables.

Weak positive correlation

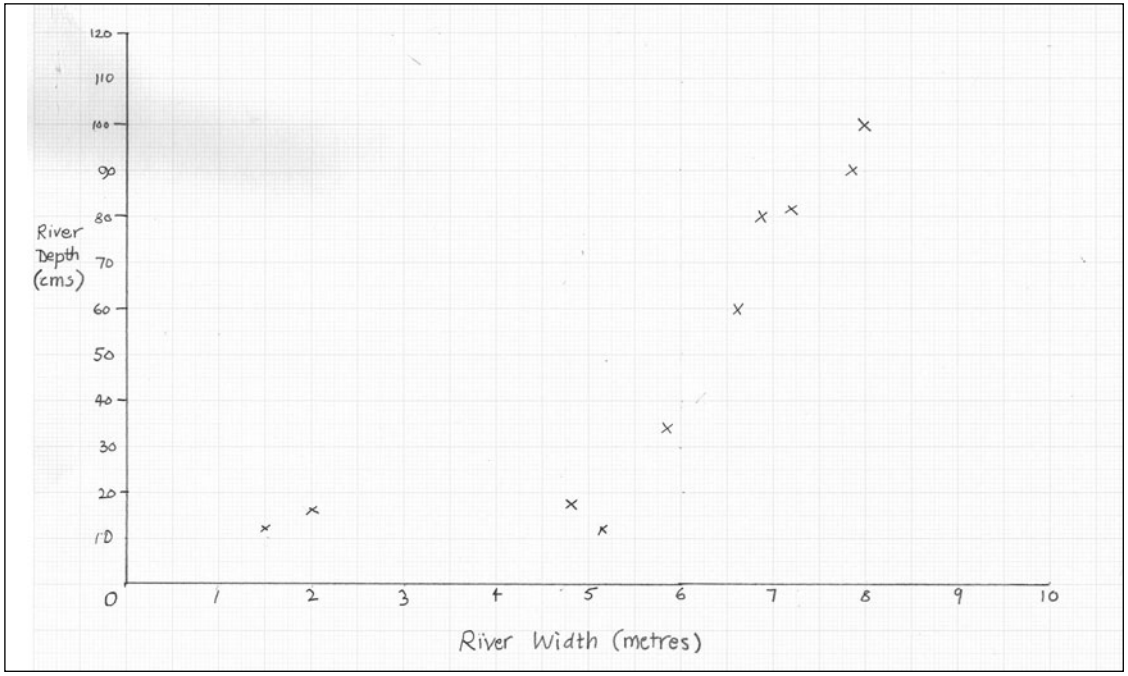


Strong positive correlation



The closer the dots are to the line of best fit, the stronger the relationship is between the variables being investigated.

The scattergraph below is for the width and depth of ten sites along a river. The student wanted to find out if there was a relationship between the width and depth of the river.



Activity

- Complete the graph by adding a best fit line.
- Compare the graph with those on page 64 to discove the type of correlation.
- Write an analysis for this graph.
- Work in pairs to mark each other's analysis and make suggestions on how it could be improved.

My analysis

Partner's comments on my analysis

Other techniques you can use to analyse your data require you to make simple calculations. The techniques below may have been referred to in maths lessons as measures of central tendency. They are different ways of discovering the number that is the 'centre' of a set of values. They can be used in geography to see how different sets of data relate to one another.

Mean	This is the average of a set of values. It is the most commonly used measure of central tendency and is often referred to as the 'average'. To calculate the mean, add together all of the values in the range and then divide the total by the number of values. The main advantage of this method is that it uses all of the data. However, it does include all of the extremes, which may cause the result to be less accurate.
Median	This is the middle value of a set of data. To calculate the median the data must be arranged in rank order, then count to the middle value – this is the median. It is very easy to work out if there is an odd number of values. For example if there are 21 values then the median is the 11th value because this splits the bottom 10 from the top 10 values. If there are two middle values, you must add them together and divide by two to get the median. If there is an even number but the two middle numbers are a repeat then the answer is that number.
Mode	This is the number in a list that is the most frequent. In order to work this out it is a good idea to do a tally chart to work out which number appears the most frequently.

Activity

1. Calculate the median values for each of the sets of data.

2. Calculate the modal values for each set of data.

3. Comment on your findings.

(Answers can be found on the Glossary page.)

Data for activity	Answers
a) 1, 2, 2, 2, 3, 5, 7, 7, 8, 9	**1.** a) _____ b) _____ c) _____ d) _____
b) 2, 2, 2, 3, 6, 7, 7, 8, 9	**2.** a) _____ b) _____ c) _____ d) _____
c) 1, 2, 2, 5, 6, 6, 8, 9, 9, 9	**3.** _____ _____
d) 2, 4, 6, 2, 3, 8, 7, 12	_____ _____

Use this page to plan the analysis of the graphical techniques in your controlled assessment study.

Your conclusion

The conclusion of your study should meet the criteria in the box below. Remember you are not allowed help in this section of the controlled assessment; the work must be completed independently. Your teacher can teach you the skills needed for this section but cannot correct your work.

A top mark band conclusion should include the following:

- Concluding comments are accurate and relate to the hypotheses and main task question.

This means that the statements made in the conclusion are correct for the results that you have obtained. The task question and sub-questions have all been answered.

- Conclusions refer to the evidence collected in the study to back up the statements made.

This means that you have used the results of your study as evidence to back up your conclusions.

- Theories are referred to where appropriate.

Some studies can be based on geographical theories. If this is the case, such as Bradshaw's model of river characteristics, the theory should only be referred to in the conclusion if it has been used in the introduction to the study to base the hypotheses on.

Here are some words and phrases that may help your analysis, conclusion and evaluation.

Time
after
as a result of
at the start
eventually
first, ... secondly
later
meanwhile
next
then
twenty years on

Cause and effect
as a consequence
as a result of
consequently
inevitably
initiating
precipitating
resulting in
the effect of this is
the result is
this results in
this, in turn, causes
triggering

Emphasis
above all
especially
in fact
in particular
indeed
mainly
most
most significantly
mostly
notably
significantly
unfortunately
usually

Adding
and
another
as well as
following
in addition
moreover
so
then
too

Persuasion
certainly
clearly
evidently
obviously
of course
undoubtedly

Evaluating
despite this
however
nevertheless
on the other hand

Summing up
in conclusion
on the whole
overall
to sum up

Balancing
alternatively
although
however
instead of
nonetheless
though
unless
unlike
whereas
while

Contrasting
alternatively
although
despite this
however
instead of
nevertheless
on the other hand
otherwise
though
unless
unlike
whereas
while

Comparing
also
as with
equally
in the same way
like
likewise
similarly

Logic
as a result of
because
however
in fact
therefore
this shows

Examples
for example
for instance
in the case of
revealed by
such as

Source: Juliet Andrew-Evans; *Writing in Geography*, Shropshire County Council 2007

Use this area to plan out a conclusion for your own study.

6 Evaluation

How will my work be marked?

This section of the controlled assessment is to be written up under a high level of control.

This means that your teacher or another adult who represents the school must be present at all times and that you cannot take your work home. Your work must be handed out at the beginning of a lesson and collected in at the end.

You must do all of the work yourself. Your teacher can show you how to write an evaluation but they are not allowed to proof read your work.

You have to evaluate three areas of your study:

- methods of data collection
- data presentation
- analysis and conclusion, in other words the usefulness of the study, its limitations and how it could be improved in the future.

Assessment criterion e – evaluation	
Mark range	**Descriptor**
0	There is no evaluation.
1–3	There is limited evaluation of the investigation: either all aspects of the investigation have been evaluated in limited detail or some aspects of the investigation have been evaluated in more detail.
4–6	There is evaluation of the investigation which varies in completeness between the aspects. Some of the limitations of the evidence collected have been recognised.
7–9	There is detailed evaluation of the investigation which reflects on the limitations of the evidence collected.

Activities

Use the space provided to list and define the key terms you are going to use.

You should use the tick list to ensure that your 'evaluation' section has all the necessary ingredients.

Key terms

Evaluation (9 marks)	Tick when completed
Did the methods you used in your study help you to answer the question; were they appropriate?	
Have you justified why you used the presentation techniques that you used; were they appropriate?	
How well were you able to answer your original question based on the primary/secondary evidence you collected?	

The evaluation section of your controlled assessment is worth nine marks, but what is an evaluation? It means a reflection of what you have done throughout your controlled assessment. The mark scheme on page 70 refers to different aspects of the study that must be evaluated but does not state what is meant by the term 'aspects'.

You should include evaluation of:

- the methods of data collection
- the methods of data presentation
- the analysis and conclusions, in other words the usefulness of the study, the limitations of the conclusions and how the study might be improved.

There are many different ways that an evaluation can be written.

1. As you complete each section – as soon as you get back from the fieldwork day write your methodology table and then identify the advantages, problems and limitations of the methods you chose. Remember that the evaluation must be written under a high level of control.

2. At the end of your work, either taking each aspect separately or linking the different aspects of the evaluation together in one piece of writing.

Whichever way you decide to do the evaluation, such as 1 or 2 above, it must be completed under a high level of control.

Below is an example of a top band data collection evaluation. At the side there are comments on the work.

Traffic counts – I collected traffic data for two periods (for ten minutes each) and both times were in the morning. It was also a week day. The traffic counts helped me to determine the busiest places and times. They also gave me data that I could compare with other members of the class who were also doing traffic counts.

However, if I had counted the traffic several more times during the day, for example during the rush hour in the morning, I would have had much more accurate results about the traffic volume and movements in the town. The results would also have been more beneficial if other groups had been counting traffic at exactly the same time.

The location of the CBD based on traffic data on Map 2 might have been different or the shape might have been different, therefore my conclusions would have changed if more traffic counts had been carried out. The actual method of data collection was easy to do.

Gives a brief description of the data collection technique.

States the value of the technique, in other words the data it provided.

States how the technique could have been improved.

States how the results have impacted on the study as a whole.

Activity

Read the data presentation evaluation in the box below.

Write a comment in the space provided.

Remember…

Remember you are looking for:

- a brief description of the technique
- the value of the technique
- how the technique could be improved
- how the results impacted on the study as a whole.

I used four different maps to show the data I collected. I added together the data collected at two times to draw the traffic count map (Map 2) and the pedestrian count map (Map 3). I used flow lines to show the amount of traffic and proportional circles to show the number of pedestrians. Both these give an idea of where the data was collected as they are based on a map. It also clearly shows where there were the most cars and people in the CBD. I used a land use map to show how different buildings are used, this is a good method because it shows how the land use varies across the town. I used the same map to show the different heights of the buildings because it then locates the buildings' heights with their land use. It will give a spatial representation of the town.

I could have made a series of overlays of the CBD from each of the four maps, this might have given me a better idea of the CBD as the areas which overlapped would have represented the CBD. However, you get the same effect by looking at all of the maps separately.

Activity

On the following page, record information that you might include in the evaluation of your controlled assessment.

Comment

Use the mark scheme on page 12 to help you write your comment.

Aspects of the evaluation	Initial ideas on the study
Methods of collecting data	What problems did you encounter while completing your techniques? What were the limitations of the methods of data collection?
Methods of presenting data	Why did you choose the techniques that you used? What were the limitations of the methods of data presentation?
The analysis and conclusion	How useful is the information you have collected? What were the limitations of your results? How could your study be improved?

7 Planning and organisation

How will my work be marked?

This section includes marks for spelling, punctuation and grammar.

Your teacher will be looking for the following:

- that the text is legible and that spelling, punctuation and grammar are accurate
- that you have selected and used an appropriate style of writing and used specialist vocabulary
- that you have organised information clearly and logically.

Assessment criterion f* – Planning and organisation (*refers to SPaG)	
Mark range	**Descriptor**
0	The investigation report lacks any planning or organisation. Geographical terminology is absent. Spelling, punctuation and grammar errors are very frequent.
1–2	The work may be incomplete and not fully organised into a logical sequence. Geographical terminology may not be used accurately or is inappropriate. Spelling, punctuation and grammar errors are very frequent.
3–4	There is a sequence of enquiry in the investigation report. Content is clear, for example page numbers are all present. The student spells, punctuates and uses the rules of grammar with some accuracy. Geographical terminology is used appropriately in the investigation report.
5–6	**Students must be within the word limit to achieve this level.** An organised and well-structured report showing the correct sequence of enquiry followed. Diagrams are integrated into the text with appropriate sub-headings. Grammar, punctuation and spelling errors are almost non-existent. Clear and accurate use of geographical terminology to support the work.

Activities

Use the space provided to list and define the key terms you are going to use.
Use the tick list to ensure that your 'planning and organisation' section is complete.

Key terms

Planning and organisation (6 marks)	**Tick when completed**
I have included a contents page, page numbers, title and headings.	
I have integrated (written about) diagrams, figures in the text.	
All my diagrams have headings.	
I have checked my spelling, punctuation and grammar.	
I have used appropriate geographical terminology.	
My work is organised and has a logical sequence to the enquiry.	
My work is 2,200 words long or less.	

There are six marks available for the planning and structure of your study.

The examiner will be looking for the following:

- a well-established sequence
- diagrams which are integrated into the text with appropriate sub-headings
- the appropriate use of geographical terminology
- accurate spelling, punctuation and grammar
- page numbers, contents page and a bibliography (if appropriate) are present.

What is meant by a well-established sequence?

There is really no need for you to put in a special section on this as long as the study is in sections that show a steady progression, and the work is easy to read with good linkage between the different chapters, then the examiners will not expect anything extra.

If you wish to include a sequence to the investigation section in your introduction, one way of doing it is a road map. A road map is also a good way of checking that you have included all of the work that is necessary for a top grade mark.

An example of a simple road map

Keeping to the Word Count

The key is to write in a succinct manner, with brevity and using correct geographical terminology. The following is suggested:

- Cover page – 1 page
- Contents page – 1 page
- Purpose – 1–2 pages
- Methods of collecting – 1 page
- Methods of presenting – 2 pages
- Analysis – 2–4 pages
- Conclusions – 1 page
- Evaluation – 1 page
- References – 1 page

You may also wish to include Appendices.

Sequence to the investigation

Activity

Plan your own road map based on the one on page 75.

Add the dates that you expect to complete the activities.

My road map

Activity	Date completed

Notes

Using geographical terminology in your work

What is meant by the appropriate use of geographical terminology?

You will be expected to include in your study geographical terms. This part is very easy because as long as you use the correct terminology for the data collection and data presentation sections you will be using geographical terminology. The examiner will also be looking at your ability to spell, punctuate and use the rules of grammar.

Activity

In the box below is part of a student methodology section on a Rivers theme question.

In the space provided rewrite the methodology using correct geographical terminology, accurate spelling, punctuation and grammar.

The spead of the river

To measure the spead we through an orange into the river. First we put two poles into the river 5 metres apart. We through the orange into the river and timed how long it took to get between the poles.

How wide and deep is the river?

To find out how wide the river is we mesured from one side of the river to the other.

To find out how deep the river is we put our hands in the water holding a tape mesure.

How steep is the river?

We used the two poles that were already in the river. We used a gun thing to mesure the steepness from one pole to the other pole.

Rivers methodology

What is meant by diagrams that are well integrated into the text?

You will include maps, diagrams, field sketches and graphs in your controlled assessment but if you just put them into the work without writing about them in the text then they will not become part of the study and your mark will be lower.

Remember whenever you include an artwork of any form include a piece of writing about the work. If the piece of writing is further on in your study you should put in a page reference to direct the reader to the artwork you are referring to. This is especially important if the analysis and conclusions are done as a separate section. Any artworks such as graphs which are referred to in the analysis or conclusion should have a page reference provided.

Your study should have a contents page and page numbers. This will organise the study and give it a sequence. The study should also contain a bibliography of the textbooks and websites or other resources that you have used. The bibliography should include the book title, the author name and the publisher's name.

Typical contents page

Chapter	Page number
Introduction	
Methods of data collection	
Methods of data presentation	
Analysis	
Conclusion	
Evaluation	

Activity

Use the space on this page to keep a record of the textbooks and websites you have used, ready to write your bibliography.

Bibliography

8 Glossary

Aim: A statement of what you hope to achieve.

Analysis: The stage in the report where you describe what you have found, provide explanations, make linkages, etc.

Annotation/Annotated: The process of adding detailed notes and explanations to photographs and images.

Bi-polar tables: These tables or scales have a range that have opposite viewpoints at either side of the scale which has a plus/minus range.

Cartographic techniques: Different ways of drawing maps.

CBD: Central Business District. This is the commercial centre of an urban development.

Chloropleth maps: A map that illustrates the measurement of variable statistics by shading sections in differing colours.

Clinometer: An instrument used to measure the angles of a slope.

Conclusion: The summary of what you have found – the final finishing-off section.

Collation/Collated: Drawing together statistics and data from varying sources into one report.

Confluence: A point where two or more bodies of water meet.

Correlation: The (statistical) degree of linkage between two sets of data.

Data presentation: Showing the reader your data in an easy-to-understand format, i.e. maps, graphs, sketches, etc.

Distribution: The (spatial) pattern of a particular characteristic, feature or people within an environment.

(Geographical) Enquiry: The process of asking a geographical question, completing the fieldwork and writing-up which come together to form the report.

Evaluation: A reflective process, saying what was good/bad, commenting on the reliability of results.

Fieldwork: Going outside and collecting data about people, places and environments.

GIS: Geographical Information System – a modern way of representing points on a digital map.

Groyne: A hard-standing structure built out from a shoreline or river bank designed to limit the movement of sediment.

High level control: Work which has to be completed under the direct supervision of a teacher.

ICT: Using computers and technology in one form or another as part of the controlled assessment.

Interview: Longer open-ended style of questioning someone; like a conversation.

Introduction: The start of the report, setting up what you intend to do, giving background information.

Labels: Additions to maps and sketches that add extra information.

Land use: A classification and then recording of the type, number and distribution of features on the ground.

Limited level control: Work which can be carried out not under the direct supervision of a teacher.

Literacy: Being able to communicate well in the written form using structured sentences and incorporating geographical terminology.

Location: The area chosen for your study.

Mark scheme: The published criteria which link to different sections of the report so that your teacher can award different marks.

Mean: An average of a group of numbers gained by adding all the figures from a list and dividing by the total number of figures added.

Median: Divides the data into two halves; the median is the middle value (which may be different to the mean).

Methods/Methodology: A description of the fieldwork techniques used to collect data to support your enquiry.

Mode: The most frequently occurring number in a series of numbers.

Primary data: Data that you have collected yourself, first hand – it may come from the Internet as well.

Proportional symbols: Used on maps to show data, these symbols are larger or smaller in relation to each other, the more of something there is, the larger the proportional symbol.

Quadrat: A hollow square of wood, metal or plastic in a specified size used to assist in counting within the area covered by the square.

Qualitative data: Information which is subjective or does not have any numbers such as a photograph or sketch map.

Quality of life: A broad idea of how pleasant or agreeable an area might be in terms of housing, schools, environment, etc.

Quantitative data: Data which contains numbers and figures such as the number of pedestrians.

Question: A geographical question that might be asked at the beginning of an enquiry.

Questionnaire: Usually an interview where there are lots of questions and factual, numbered responses.

Range: The difference between the highest and lowest values in a set of data.

References: Details of any published work/research you have used as part of your work.

Reliability: How sure you are that your results are actually really telling the 'truth', i.e. they are accurate and could be repeated.

Report: The work that you will hand in for the controlled assessment – it will be marked by your teacher.

Sampling: A way of getting data for your study without collecting loads of information.

Secondary data: Data that you got from someone else that is in a written-up form.

Subsidiary questions: These break the main task questions into 'bite-sized bits' to help you understand and answer it.

Task: (Sometimes the task statement.) A broad title set by Edexcel each year that gives the context for the controlled assessment.

Theory: A geographical idea or concept that may underpin the reason for your aims/questions.

Transect: A line along which you carry out sampling, such as a road or river.

Answers for page 80:

1a) 4, b) 6, c) 6, d) 5
2a) 2, b) 2, c) 9, d) 2

My notes