

Paper 4: Alternative to Coursework

This paper requires you to understand how coursework is carried out, so you will need to combine the knowledge with the geographical skills you have gained over the course.

RIVERS COURSEWORK

What could you find out:

- Change in load (size and shape) from source to mouth
 - Changes in channel depth, width, cross-section from source to mouth
 - Changes in discharge from source to mouth
 - Changes in river gradient from source to mouth
 - Changes in valley size and gradient from source to mouth
 - Changes in land use a long a river
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COASTS COURSEWORK

What could you find out:

- Changes in vegetation as you move inland
 - Changes in beach profile and sand dune profile
 - Speed of longshore drift
 - Changes in land use
 - Changes in defences
 - Changes in beach or dune material
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SETTLEMENTS COURSEWORK

What could you find out:

- Changes in land use
- Changes in traffic
- Changes in the number of pedestrians
- Number and type of tourists

- Changes in the quality of the environment or pollution levels
 - Changes in the cost of products
 - Comparison to the Burgess and Hoyt Models
 - Changes in wealth or population density
 - Sphere of influences of settlements or services
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WEATHER COURSEWORK

What could you find out:

- Changes in temperature throughout the day or between seasons
 - Changes in the amount of rainfall
 - Changes in humidity
 - Changes in the hours of sunshine or cloud cover
 - Changes in wind speed and wind direction
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WHAT DO YOU DO BEFORE YOU CARRY OUT ANY FIELDWORK

You need to decide on a suitable study location by making sure that it has all of the necessary geographical features you need to complete your study. You also need to think about how you can carry out the fieldwork safely.

To make sure that your fieldwork is safe you need to think about:

- Protection from the weather
 - Sensible clothing
 - Carrying out research in groups
 - Carrying a mobile phone with you
 - Check that the area is safe
 - Carrying it out at an appropriate time of day
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WHAT SHOULD THE COURSEWORK INCLUDE:

Hypothesis:

- This is a prediction that you make before you have collected your data
- This is normally based on theory
- During your fieldwork you attempt to prove or disprove your hypothesis

- Your hypothesis should be SMART
 - **S**pecific
 - **M**easurable
 - **A**chievable
 - **R**ealistic
 - **T**ime-related

DATA COLLECTION

Whenever you are doing data collection it is important to be as objective as possible (this means that there is no bias and your personal opinions do not affect the outcome). You may also collect a combination of primary and secondary data.

- Primary data is any data that is collected by you personally
- Secondary data is data that has been collected by someone else

	Primary Data	Secondary Data
Advantages	<ul style="list-style-type: none"> - It is up to date - You know how the data has been collected - It only includes information relevant to your study - It only covers your study area 	<ul style="list-style-type: none"> - You can study changes over time - It can be quicker and easier - You can study a large area - It may include information you could not find out
Disadvantages	<ul style="list-style-type: none"> - It might include some personal bias - Can be time consuming - Hard to study changes over time - Some data might be dangerous or difficult to collect - Only possible to cover a small area 	<ul style="list-style-type: none"> - It is usually out of date - Might be more information than you need - Might study a larger area than you need - You might not know how the data was collected - Data might be in the wrong format

Data can also be described as quantitative or qualitative.

- Quantitative data is that which involves figures, making it easier to present and analyse
- Qualitative data is that which is written information or photographs, so it tends to be more personal but difficult to present and analyse

When collecting data there are three approaches which can be taken.

- Random sampling is where every person in a study area has an equal chance of being selected because people are selected at random

- Systematic sampling is where data is collected at regular intervals (every 10th person) and removes any bias
- Stratified sampling is where you select your sample to reflect the characteristics of the sample area (e.g. you select the same ratio of males to females in your sample as there is in the study area)

DATA COLLECTION TECHNIQUES

Questionnaires

- They can be written or oral to gain information from an individual or a group of people
- It is important that questionnaires are carefully planned to include both open (unlimited number of responses) and closed (limited number of responses) questions
- It is important to decide on the following:
 - What questions you will ask
 - Whether you will give the questions orally or in written form
 - How you are going to record the answers
 - How you are going to sample

Land Use Surveys

- This involves recording the various types of land use within the study area
- This can be recorded in a tally or on a map

Photographs

- It is an easy method to collect data due to the improvement of technology
- It is important to make sure that the photographs are relevant to the hypothesis

Counts

- Traffic counts and pedestrian counts are two common examples
- These involve standing in a predetermined location and counting the number of vehicles, etc which pass by in a set amount of time

Bipolar Environmental Survey

- This is a useful way to analyse the environmental quality of an area
- It involves ranking an area on a number of features on a scale (usually from -5 to +5)

Other measurements can also be taken, such as measuring the depth of a river or the average size of material on a beach.

FIELDWORK EQUIPMENT

There is a wide variety of equipment that can be used to collect data on a field trip. This may include weather equipment such as a thermometer, barometer, rain gauge, etc. Other fieldwork equipment includes:

- Quadrant
 - Normally used for measuring vegetation cover
 - By placing the quadrant over an area to calculate the area covered
 - They can be used for randomly selecting an area of study
- Tape Measure
 - Used for measuring medium distances
- Meter Rule
 - Used for measuring short distances
- Trundle Wheel
 - Used for measuring longer distances
- Clinometer
 - Used for measuring slope angles (gradients)
 - Normally used alongside ranging poles
- Ranging Poles
 - Normally used for measuring slope angle with a clinometer
 - Can be used for measuring the depth of a river
- Flowmeter
 - Used for measuring the velocity of a river
- Stopwatch
 - Used for lots of different data collect techniques
- Compass
 - Used for working out direction
- Roundness Index

- Used to measure the shape of an object
- There are a number of different roundness index, but most got from a scale of very angular to very rounded

A transect is basically a line along which you take measurements. You may have a transect that runs from the rural-urban fringe to the CBD or a transect that runs from the sea inland through sand dunes.

METHODOLOGY

When writing up fieldwork you will have to explain how the data has been collected. You may be asked to write a set of instructions explaining how data can be collected. For examples you might be asked to give a set of instructions for doing a traffic count:

- Find a safe location near the road you are wanting to study
- Decide on the types of vehicles which you are wanting to count
- Count the traffic in both directions for a 10 minute period
- A tally should be used for countering because it is quick and easy
- At the end of the 10 minute period count up the totals for each type of vehicle

You may also be asked about how data collection could be improved. Improvements could be made in the following ways:

- Do counts more regularly e.g. every one or two hours
- Do counts and surveys in more than one location
- Do counts and surveys on different days of the week
- Get two groups doing the same survey so an average can be taken

DATA PRESENTATION

You will probably be asked to complete a graph, diagram or table. Therefore it is important that you have the following equipment:

- Pencil
- Ruler
- Eraser
- Protractor
- Compass
- Calculator

DATA ANALYSIS

You should be able to describe the patterns in data presented in graphs and tables of results. You will need to refer to the relevant geographical knowledge and understanding to interpret the data. When doing data analysis it is important to remember the following:

- Look for trends and correlations
- Look for anomalies
- Whenever you refer to trend anomalies you must support with evidence
- Try to explain the trends
- Try and explain anomalies

CONCLUSION AND EVALUATION

A conclusion is basically a summary of your investigations. If you are asked to write a conclusion remember the following:

- Refer back to the original hypothesis
- Use some data to support your findings
- Refer to theory
- State what you have learnt from your investigation

An evaluation is where you state what went well in your research, but also how it can be improved or extended in the future. If you are asked to write an evaluation, think about the following:

- What went well
- Any problems with data collection
- Data that could be useful in the future
- Additional hypothesis that you could have investigated
- Problems with time or money that could be changed in the future