

# Oxford Revise | Geography | Answers

## Chapter 32 Geographical investigations

All exemplar answers given are worth full marks.

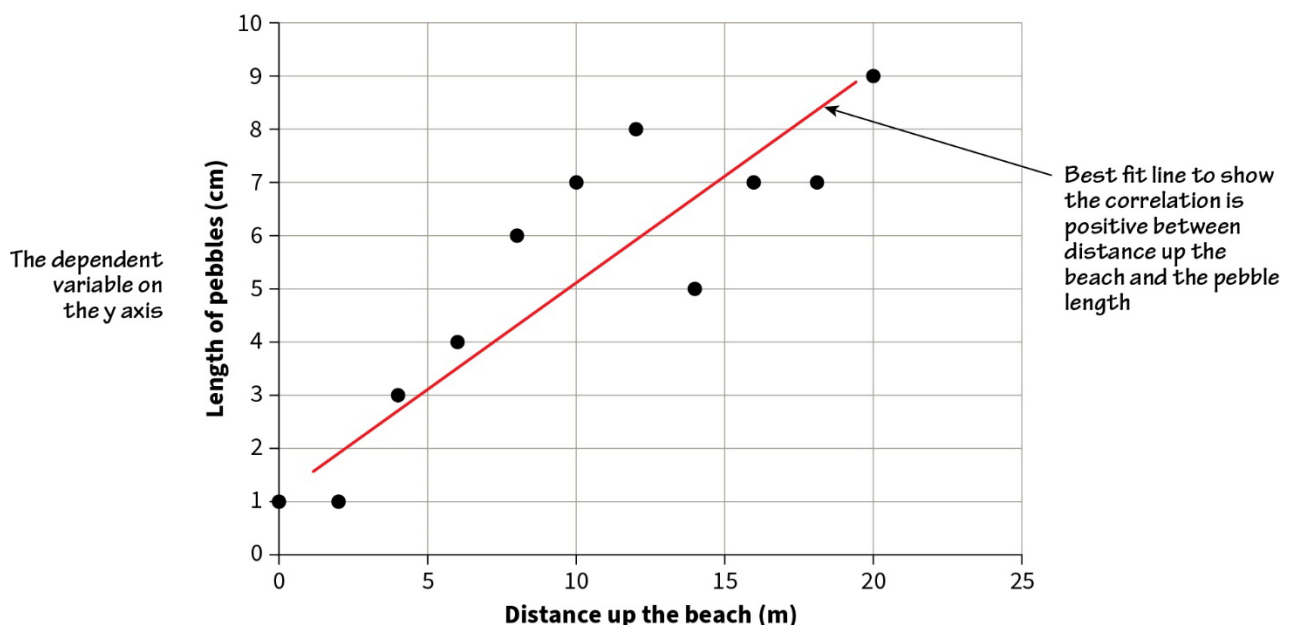
### Investigating coastal change and conflict

The answers will be tailored to a candidate's specific fieldwork.

Possible title: *Do the pebbles vary with distance from the sea on beach X?*

1.

- a) I attempted to make my data collection more reliable by using systematic sampling to eliminate bias. I laid out a tape measure every ten metres from the back of the beach down to the sea. Every two metres I picked up a pebble.
- b) I analysed my data by drawing a dispersal diagram. It showed how widely spread the lengths of the pebbles were. A comparison could then be made between the different transects down the beach. The different lengths were plotted on some graph paper. It was then possible to work out the spread of values from the smallest to the largest. In addition, I worked out the median, the middle value in this range. This divided the sets of values into half. I then divided each half into two giving the four quartiles, and marked the difference between the upper and the lower quartiles. This showed whether the length values were clustered with the pebbles very similar in length, or that their lengths were more dispersed.
- c) I drew a scatter graph to show the relationship between pebble length and distance from the back of the beach along a beach transect.



The variable causing the change in the pebble length (the independent variable) on the x axis

d) This question is level-marked:

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3	6–8	<ul style="list-style-type: none"> <li>• Accurate understanding of concepts and the interrelationship of places, environments and processes.</li> <li>• Applies understanding to deconstruct information and make logical connections throughout.</li> <li>• A balanced, well-developed argument. Judgements are supported with evidence throughout.</li> <li>• Uses geographical skills to obtain accurate information that supports arguments.</li> </ul>
2	3–5	<ul style="list-style-type: none"> <li>• Some understanding of concepts and the interrelationship of places, environments and processes.</li> <li>• Applies understanding to deconstruct information and make some logical connections.</li> <li>• Imbalanced argument with mostly relevant information. Judgements are occasionally supported with evidence.</li> <li>• Uses geographical skills to obtain accurate information that occasionally supports arguments.</li> </ul>
1	1–2	<ul style="list-style-type: none"> <li>• Isolated elements of understanding of concepts and the interrelationship of places, environments and processes.</li> <li>• Attempts to apply understanding to deconstruct information but this is flawed.</li> <li>• Unbalanced or incomplete argument with limited understanding. Judgements are supported with limited evidence.</li> <li>• Uses some geographical skills to obtain information with limited relevance and accuracy.</li> </ul>
	0	No acceptable response

Example answer: *I was able to reach the conclusion that the material did vary across the beach. My results might be true of beach X, but it does not mean that it is true of all beaches. Beach X may have specific conditions, that influenced the results I found. I only concentrated on the length of the pebbles. It would be useful to have considered their shape as well. If my sample had been larger, I would have had a more valid conclusion. I made some errors in measuring the lengths of the pebbles because I rounded each one to the nearest whole number, so they were not very precise. There was an anomaly fourteen metres from the sea but measuring at regular intervals may have missed others which did not support the conclusion reached. Many anomalies would have meant it would not have been possible to find a correlation between pebble size and the distance from the sea. The conclusion would have more valid if I had increased the sample size and carried out measurements on a different beach. There may have been seasonal variations, as I did my fieldwork in the winter when there had been several severe storms which had moved pebbles around quite a lot. Despite these limitations, I felt that I was able to come to a valid conclusion based on the data I collected on that day on Beach X.*

e) A line graph, with a suitable vertical (y-axis) will show all changes in gradient along the beach profile.

**Investigating river processes and pressures**

*The answers will be tailored to a candidate's specific fieldwork.*

Possible title: *Does the speed of the river vary downstream?*

- 2.
- a) The graph I used meant it was possible to see an overall picture of the changes in speed downstream making it easier to draw a conclusion. The photographs I took of each of the sites allowed me to refer to any special features of the site that may have influenced the speed of the river.
  - b) In order to avoid bias in choosing the sites along the river, I tried to take measurements every 100 metres. This was not always possible because some of the chosen sites did not have good access or were on private land. It meant that I had to choose places on the river that were easy to visit. Safety was also important, so the sites I went to were those where the water was not too deep nor the banks too steep to make them dangerous. I had obtained a secondary source of data from the local branch of the Environmental Agency. They were investigating possible flood risk because there were plans to build houses near to the river. I chose the same sites as they did where possible, so I could use their results as well as mine.
  - c) The main problems with my data collection were the number of sites visited and their position along the river. Measurements at more sites would have improved the reliability of the data collected. Timing how long it took an orange to travel over a metre at each site was not very accurate. The orange often got stuck in the vegetation and my friend did not say 'stop' exactly after it had travelled one metre. I timed the orange three times, but even the average was not necessarily an accurate measure of the speed. When I did my fieldwork, it was a hot summer's day and there had not been any rain for a fortnight. This meant that there was less water in the river than usual, and it was flowing more slowly. This meant results were not very typical of the river's normal speed.
  - d) This question is level-marked:

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Example answer: *I was not able to totally eliminate bias, because I could not keep the same distance between the sites, which I should have done as I was trying to use a systematic sampling method. Two of the sites, which I had chosen by examining a map, could not be used because the banks were too steep and dangerous to get to the water's edge. I was interested in finding out how the speed changed when the river was flowing naturally. One of the sites had to be changed because the river had been straightened and flowed between concentrate banks. These had been put there to increase the flow and reduce the danger of the river flooding farmland. Not all the sites had the same land use near them. Some were on farmland, and some were in more built-up areas where the land had been covered in tarmac. These differences would have affected the speed of the river because the amount of surface run-off into the river would have been different. It would have been better if all the sites had the same use of the land along their banks. I only had a short amount of time to collect the data and so the sites visited did not cover the whole length of the river. The variations in speed may have been different in the upper, middle, and lower stages of the river's course.*

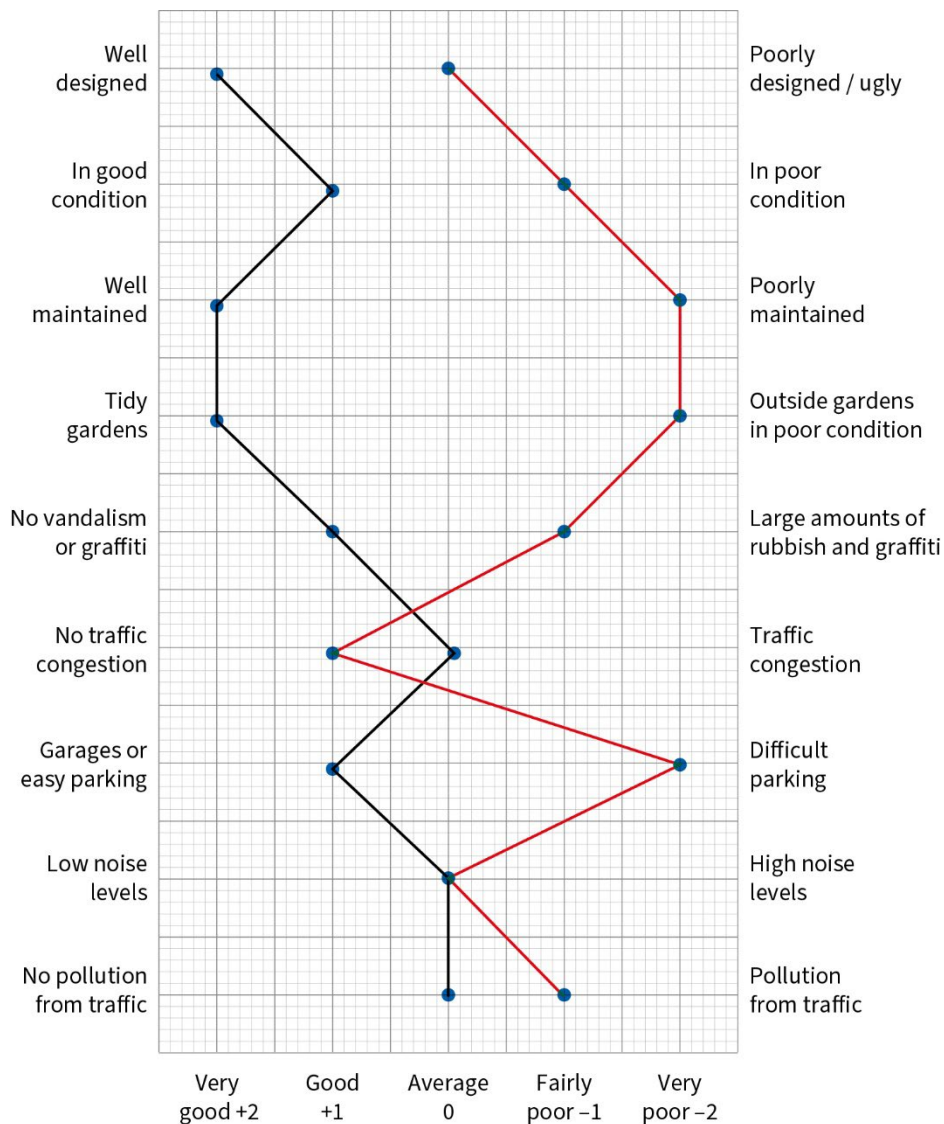
e)  $\frac{19}{100} = 1.9$

**Investigating dynamic urban areas**

The answers will be tailored to a candidate’s specific fieldwork.

Possible title: *The quality of the environment improves with distance from the city centre*

- 3.
- a) Data could be from the Index of Multiple Deprivation for wards at different distances from the city centre. This gave me some good background information for the areas of the city where I did my fieldwork.
  - b) I used a bi-polar diagram to show the different values I gave to the different parts of my environmental survey. As they were both on the same graph it was easier to make a direct comparison between the two areas. One of the areas was near the city centre and the other further out in the suburbs. The black line represents the suburban area and the red line the area near the city centre.



The values along the horizontal axis represent the scores I awarded between -2 and +2 on different aspects of the area’s environment.

c) Having given a series of scores for the different aspects of the environment, I decided to analyse the figures to see if any conclusion could be drawn. I added up the total scores and worked out the average or the mean. Unfortunately, this did not prove very effective. This was because I had used such a small range (-2 to +2), so there was not a significant difference between the two areas. It would have better to have scored each aspect out of a larger number, 10 or even 100, which would have resulted in a more meaningful average figure that could have been used to compare the two areas. It would have then been possible to draw a dispersion diagram.

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*Example answer: The main problem with the reliability of my conclusion was much of my data collection was based on my own personal point of view. I decided on what scores to give each aspect of the environment. I was therefore not necessarily completely objective in that I may have been over negative in giving a poor environmental score for a particular aspect, or been too favourable for a positive one. It was very easy to have a preconceived idea about the quality of the two areas because I did the fieldwork in a city where I have lived all my life. It did not help that the fieldwork in the area near the city centre was done on a cold and wet winter's day, quite unlike the warm weather experienced when investigating the suburban area. I should have gone back to the areas and ensured that the conditions were as similar as*

*possible in the two areas. I could have adopted a more organised way of choosing the sites within the two areas by choosing a random or systematic sampling method. I thought I was choosing sites at random, but the poor weather and the size of the area near the city centre, meant that all the environmental surveys taken were in quite a small area. This meant it was not necessarily representative of the whole area. I therefore feel that my fieldwork conclusions were not completely reliable.*

e)

i) Traffic congestion has a major environmental impact on the inner city area of Lincoln.

### Investigating changing rural areas

The answers will be tailored to a candidate's specific fieldwork.

Possible title: *The number and range of services in rural areas of county X is a reflection of the population of the village.*

4.

- a) I used a source of secondary data published by the county council giving the number of services found in eleven villages in the south of the county. The main limitation was that the information was published in 2011 so was most probably out of date.
- b) I firstly devised a classification of the shops and services that are usually found in villages. I visited three villages and did a land-use survey of all the shops and services that were present in each, and colour-coded a Goad map. In addition, I indicated whether I felt that the shop or service was largely aimed at people who lived in the village, or was there to serve tourists, or whether both groups could benefit. The number of shops and services in each village was quite small and therefore it was not necessary to take a sample, but to record all of them. I then made up a spread sheet, summarising the number of shops and services I counted.
- c) Since I classified all the shops and services in each village, I felt that my primary collection was reliable. I supplemented it with some historical data I found in some village history books and trade directories to show whether the present situation was the culmination of changes that had been taking place over several years. I also collected population figures, because if the village population had risen or fallen over recent years, this may have an impact on the number of services. I also calculated how far each of the villages were from the nearest town because I thought that if the nearest larger shopping centre was close by, a village may not have many shops even if had quite a large population.

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Example answer: *The validity of the conclusion was limited in that only three villages were sampled. There was no way it was possible to tell whether these villages were typical of all the villages in the country. The fact that they were all in the southern part of the county also meant that the conclusions did not necessarily apply elsewhere.*

*The population figures were dated as they came from the 2011 census and may have changed considerably since that time. The classification of the different types of shops and services was one that I devised, but it was sometimes difficult to decide what category a particular shop or service should be put in. Deciding whether they were tourist orientated or not was also subjective and the collection of this data was not particularly useful in drawing a conclusion. The historical data for the three villages were not from the same date and the amount of detail varied between the three villages. It therefore proved difficult to make comparisons.*

*The study was limited as it only linked the number and range of shops and services to population. It did not take into consideration other factors like increased car ownership, the age structure of the population and changing shopping habits with more people buying items online. Despite these limitations, I felt the conclusion I came to was valid based on the data I collected.*



- e) Proportional flow lines
- f) Solid colours in the key rather than hatching and stippling.