Describing, analysing and explaining fieldwork data

You need to know

- This section will help you understand your fieldwork by interpreting data you’ve collected.

Your exam

This strand contains four skills that could be tested in the exam.

1. Describing, analysing and explaining your results
2. Making links between different sets of data
3. Using statistical techniques to understand the data
4. Spotting anomalies in fieldwork data.

Figure 1 A graph, and the skills you need to interpret it

In this graph you would describe:

- The highest value or category
- The lowest value or category
- The difference between the highest and lowest (called the range)
- The average, and which categories are average, above or below average

1. Describing, analysing and explaining your results

Describing is simply saying what the fieldwork data show. It is probably the first thing that you would do with your own fieldwork data. Most likely, the data will be a table of results, a graph (like the one in Figure 1) or even a map with information added to it.

So, to describe properly, you should:

- state what the presentation method shows, e.g. what information a pie chart is showing with observations about particular categories - which is the biggest sector and which is the smallest sector, number of sectors etc.

Analysis is next.

- Analysis means breaking down the data to find geographical meaning.
- It often involves using quantitative and qualitative techniques (see page XX).
- It allows you to reach conclusions.

Explanation means that:

- Your data might show a pattern – for example, pebble size getting smaller along a beach.
- So, you could try to link the data to a reason, e.g. a process such as longshore drift.

Get exam ready

Remember that the exam will never ask you to describe your own (familiar) fieldwork data, but could ask you to describe data collected by others (unfamiliar fieldwork data).

Get exam ready

Learn some snippets of your fieldwork data to quote when you’re explaining what your fieldwork showed. A couple will do – you don’t need to learn the whole lot.
2. Making links between different sets of data

Being able to link one set of results to another can be difficult. For example, you might use a questionnaire to find how people travelled to go shopping in a town centre, and a land use map. You might find people questioned in one part of a shopping centre travelled mostly by train – checking its location on a map might show it was near the train station!

3. Using statistical techniques

Most analysis of fieldwork data involves some statistical tools (see Table 1). Remember you will likely be asked to explain how they are used, as well as performing procedures (do the maths!) linked to some unfamiliar data that is presented to you.

**Figure 2** Stats tests you need to know

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median</td>
<td>The middle value in a ranked set of data (4th of 7, 11th of 21 etc.)</td>
</tr>
<tr>
<td>Range</td>
<td>The difference between the highest and lowest values – subtract one from the other</td>
</tr>
<tr>
<td>Mode</td>
<td>The number that appears most commonly in a data set (this would be the highest bar on a bar chart)</td>
</tr>
<tr>
<td>Quartiles</td>
<td>Dividing a list of numbers into four equal groups (or quarters) – two above and two below the median</td>
</tr>
<tr>
<td>Percentage change</td>
<td>Working out an increase or decrease as a percentage</td>
</tr>
</tbody>
</table>

4. Spotting anomalies in fieldwork data.

Anomalies are unusual data that don’t fit the rest of the results. Sometimes they stand out on a graph – like point X in Figure 3. A river might be steeper at a point, so it flows more quickly. There might be boulders that have fallen from a cliff on a beach of fine sand. They could be data that are wrong because someone collected them wrongly, or data that are correct but are just different from the rest.

*Figure 3* I think we need a simpler relationship e.g. velocity vs distance downstream – so it can then be annotated with ‘Why might the river be flowing so much faster here?’

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**Get exam ready**

- Be prepared for a question asking you about any anomalies you found – what were the anomalies? what made them different from the rest?
- Be able to explain anomalies as well – or suggest a possible explanation if you aren’t sure.
- Think too – were there ways in which any anomalies affected your conclusions?
As part of a river study, a student measured pebble sizes (along the longest axis) at three places on a river (Site A, B and C). Her results are shown in Figure 4.

**Figure 4** Pebble sizes at three sites along a river

<table>
<thead>
<tr>
<th>Site A – upstream section</th>
<th>Site B – middle section</th>
<th>Site C – downstream section</th>
</tr>
</thead>
<tbody>
<tr>
<td>(mm)</td>
<td>(mm)</td>
<td>(mm)</td>
</tr>
<tr>
<td>95</td>
<td>24</td>
<td>10</td>
</tr>
<tr>
<td>68</td>
<td>19</td>
<td>12</td>
</tr>
<tr>
<td>49</td>
<td>45</td>
<td>32</td>
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<td>90</td>
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<td>82</td>
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<td>86</td>
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<td>67</td>
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<tr>
<td>56</td>
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<td>12</td>
</tr>
<tr>
<td>80</td>
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<td>49</td>
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<td>57</td>
<td>1</td>
<td>22</td>
</tr>
<tr>
<td>70</td>
<td>19</td>
<td>15</td>
</tr>
<tr>
<td>59</td>
<td>21</td>
<td>9</td>
</tr>
</tbody>
</table>

a) Using the data in Figure 4, circle the anomaly in the column for Site B.  

b) Using the data in Figure 4, calculate the median sediment size for Site A.  

c) Using the data in Figure 4, calculate the interquartile range of the pebble size data for Site C. Show your working in the space below.
d) Using the data in Figure 4, compare the differences between pebble size for Sites A and C. [3 marks]

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e) Using the data in Figure 4, explain the links between the three different sites. [4 marks]

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2. As part of an enquiry collecting primary human geography data, a student recorded the number of shops and services in towns and villages of different population sizes. The results are presented in a graph, Figure 5.

a) Using the data in Figure YY, calculate the range in the number of shops and services. Show your calculations. [1 mark]

Space for calculation

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b) Use the data in Figure 5 to:
   i) Identify the relationship in Figure 5 between population and the number of shops and services. Tick the word that describes the relationship in Column A below. Put a cross next to the correct word.
   ii) Identify the term in Column B which describes how strong that relationship is. Put a cross next to the correct word.

   ![Figure 5 Add a caption here please]

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Column A</th>
<th>Strength of relationship</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td></td>
<td>Strong</td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td></td>
<td>Weak</td>
<td></td>
</tr>
<tr>
<td>Random</td>
<td></td>
<td>No relationship</td>
<td></td>
</tr>
</tbody>
</table>

   [2 marks]

c) Using the data in Figure 5, suggest **one** reason for the relationship between population and number of shops and services.

   [3 marks]
3. As part of a fieldwork trip to collect primary physical geography data, a student photographed two different areas of the coast. The result is the photograph in Figure 6.

![Fieldwork Trip Image]

a) Suggest one technique that could be used to analyse the information in the photograph, Figure TT.

[1 mark]

b) Explain one disadvantage of the analysis of qualitative data such as photographs.

[2 marks]
Over to you

1. a) State the title of your fieldwork enquiry in which **physical** geography data were collected.  

[2 marks]

b) Explain one method that you used to analyse your **primary** fieldwork data.  

[2 marks]

c) Justify **one** analysis technique used in relation to the aim(s) of your physical geography enquiry.  

[2 marks]

d) Explain any links between two sets of data that you collected in your physical geography enquiry.  

[3 marks]

e) Assess how effective your analysis technique(s) were in representing the data collected in this enquiry.  

[6 marks]
2. State the title of your fieldwork enquiry in which human geography data were collected. [2 marks]


b) Explain one advantage of a technique you used to analyse the fieldwork data. [3 marks]


3. With reference to your analysis and explanation of fieldwork data in one of your enquiries, suggest how the techniques used could be improved.

Title of fieldwork enquiry: [9 marks] [+ 3 SPaG marks]