GradeMax

edexcel

Mark Scheme

Winter 2020

Pearson Edexcel IAL
In Geography (2001)
Paper 2: Geographical Investigations
WGE02/01

General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Placing a mark within a level mark band

- The instructions below tell you how to reward responses within a level. Follow these unless there is an instruction given within a level. However, where a level has specific guidance about how to place an answer within a level, **always** follow that guidance.

- **2 mark bands**
  Start with the presumption that the mark will be the higher of the two.
  An answer which is poorly supported gets the lower mark.

- **3 mark bands**
  Start with a presumption that the mark will be the middle of the three.
  An answer which is poorly supported gets the lower mark.
  An answer which is well supported gets the higher mark.

- **4 mark bands**
  Start with a presumption that the mark will be the upper middle mark of the four.
  An answer which is poorly supported gets a lower mark.
  An answer which is well supported and shows depth or breadth of coverage gets the higher mark.

- Mark schemes will indicate within the table where, and which strands of QWC, are being assessed. The strands are as follows:

  i) ensure that text is legible and that spelling, punctuation and grammar are accurate so that meaning is clear

  ii) select and use a form and style of writing appropriate to purpose and to complex subject matter

  iii) organise information clearly and coherently, using specialist vocabulary when appropriate.

<table>
<tr><th>Question Number</th><th>Answer</th><th>Mark</th></tr>
<tr><td>1(a)(i)</td><td>AO2 (2 marks)
Award 1 mark for each correct identification. Maximum 2 marks.
<table><tr><td>Zone</td><td>Number</td></tr><tr><td>Nearshore</td><td>2</td></tr><tr><td>Backshore</td><td>4</td></tr></table></td><td>2</td></tr>
</table>

<table>
<tr><th>Question Number</th><th>Answer</th><th>Mark</th></tr>
<tr><td>1(a)(ii)</td><td>AO1 (2 marks)
Award 1 mark for explaining influence of structure and a further 1 expansion mark for explaining how that influences rates of coastal recession.

• Highly jointed or faulted rocks present many planes of weakness (1) along which weathering agents (e.g. water) can penetrate into the rock (1).
• Highly fractured rock is less resistant to erosion (1) with faults providing a line weakness increasing recession / erosion rates (1).
• Dip (angle) of rock affects erosion resistance (1) therefore the angle of the dip may allow quicker rates of erosion (1).

Accept other valid explanations.

Note: no credit for an explanation based on rock type or hardness (lithology).</td><td>2</td></tr>
</table>

<table>
<tr><th>Question Number</th><th>Indicative content</th></tr>
<tr><td>1(b)</td><td>AO1 (6 marks) AO2 (2 marks)

Marking instructions
Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.
Indicative content guidance
The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:
AO1</td></tr>
</table>

	• A sediment cell (or littoral cell) is a largely self-contained stretch of coastline. • They are regarded as closed systems as sediment is not usually transferred from one cell to another to the other neighbouring cells. • Each sediment major cell typically has many smaller sub-cells. • They are often determined by the topography and shape of the coastline which directs the movement of the sediment within the cell. • The defining of sediment cells helps consideration of coastal process as a system and assists coastal management plans by illustrating the links between inputs, components, stores, transfers and outputs. **AO2** • Most agree the systems approach is then of great help coastal managers and planners. • Coastal systems are very complex, and some would argue that the sediment cell concept is an oversimplification in both time and space. • In reality, some sediment does get transferred between neighbouring cells therefore the utility of the concept can be questioned in terms of helping to understand coastal management / systems approach. • Large features like a peninsular are often used as boundaries (littoral drift divides) between cells form a "convenience point of view" rather than systems theory. • Littoral drift divide can occur without any dramatic change in the shape of the coast (e.g. in North Norfolk) and this position changes over time limiting the usefulness of the model.

Level	Mark	Descriptor
Level 0	0	No acceptable response.
Level 1	1–3	• Demonstrates isolated elements of geographical knowledge and understanding, some of which may be inaccurate. (AO1) • Understanding addresses a narrow range of geographical ideas. (AO1) • Understanding of geographical ideas lacks detail. (AO1) • Applies knowledge and understanding to geographical information/ideas, with limited logical connections/relationships. (AO2)
Level 2	4-6	• Demonstrates geographical knowledge and understanding, which is mostly relevant and may include some inaccuracies. (AO1) • Understanding addresses a range of geographical ideas. (AO1) • Understanding of geographical ideas is not fully detailed and/or developed. (AO1) • Applies knowledge and understanding to geographical information/ideas logically to find some relevant connections/relationships. (AO2)

Level 3	7-8	• Demonstrates accurate and relevant geographical knowledge and understanding throughout. (AO1) • Understanding addresses a broad range of geographical ideas. (AO1) • Understanding of the geographical ideas is detailed and fully developed. (AO1) • Applies knowledge and understanding to geographical information/ideas logically to find fully relevant connections/relationships. (AO2)

Question Number	Answer	Mark
2(a)(i)	**AO2 (2 marks)** Award **1** mark for each idea. Maximum **2** marks. • Area has been urban landscaped / new pavements (1) • New street furniture (1) • Children's playground (1) • Trees in pots (1) • Boulders on the ground (1) • Attempted cafe culture / restaurants in background (1) • Benches and seating (1) • Pedestrianisation (1) • New surfaces to walk on (1) • Cycle parking area (1) Accept other valid ideas.	**2**

Question Number	Answer	Mark
2(a)(ii)	**AO1 (2 marks)** Award **1** mark for explaining a solution example and a further expansion mark that explains how air pollution is reduced, up to a maximum of **2** marks. • Cities e.g. Masdar, Abu Dhabi, are planned to operate on renewable electricity / energy which means that it will try to be carbon-zero (1) with lower pollution / carbon emissions from transport as using EVs (1). • City planners e.g. London, Barcelona etc have an emphasis on green transport, e.g. walking and bicycles (1) this has reduced diesel / petrol energy consumption from transport (1). • Cities are pricing polluting vehicles, e.g. London, through congestion / emissions charging (1) which means that people are encouraged to use greener public transport alternatives (1). • Some cities have developed new infrastructure, e.g. Dubai urban metro trams (1) so that people use their cars less and this reduces pollution (1). Credit other valid examples and ideas, either planned or already developed.	**2**

	Note: named city not required for the marks as long as location is explicit in explanation.	

Question Number	Indicative content	
2(b)	**AO1 (6 marks) AO2 (2 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include: **AO1** • Many cities are seeing very high urban growth rates, especially in S.E Asia. These creates problems of both waste collection and disposal. • Rural to urban migration is a process that is creating waste disposal problems associated with illegal dumping. • Health issues are linked to poor waste management and disposal. • Informal slum housing (developing cities) has environmental problems associated with pollution and waste management. • There is a very strong correlation between municipal solid waste generation per capita and income of a country or region. **AO2** • NGO and community groups play a role in improving housing and services in slum areas in developing world cities and providing better waste management in developed cities. • There are opportunities for much greater waste recycling in many cities, reducing the need for landfill, but this has cost implications. • In developing and rapidly growing cities the lack of good waste management links to other factors, e.g. education and skills, employment opportunities, quality of life, health etc. • New waste management systems, where available, may not benefit all individuals and groups within an area, so the degree of problems can be variable. • In developed world cities urban air pollution is probably much more of a problem than solid waste management. • In developed world cities transport and congestion are also significant issues, as are affordability of housing. Waste therefore can be less of a priority for planners and governments.	
Level	Mark	Descriptor
Level 0	0	No acceptable response.
Level 1	1–3	• Demonstrates isolated elements of geographical knowledge and understanding, some of which may be inaccurate. (AO1)

		• Understanding addresses a narrow range of geographical ideas. (AO1) • Understanding of geographical ideas lacks detail. (AO1) • Applies knowledge and understanding to geographical information/ideas, with limited logical connections/relationships. (AO2)
Level 2	4-6	• Demonstrates geographical knowledge and understanding, which is mostly relevant and may include some inaccuracies. (AO1) • Understanding addresses a range of geographical ideas. (AO1) • Understanding of geographical ideas is not fully detailed and/or developed. (AO1) • Applies knowledge and understanding to geographical information/ideas logically to find some relevant connections/relationships. (AO2)
Level 3	7-8	• Demonstrates accurate and relevant geographical knowledge and understanding throughout. (AO1) • Understanding addresses a broad range of geographical ideas. (AO1) • Understanding of the geographical ideas is detailed and fully developed. (AO1) • Applies knowledge and understanding to geographical information/ideas logically to find fully relevant connections/relationships. (AO2)

Question Number	Answer	Mark
3(a)	**AO3 (3 marks)** Award **1** mark for identifying a how the question was developed and a further expansion marks up to a maximum of 3 marks. Nature of question, title or hypothesis will vary depending on the location as well as the context of the investigation. • Identification of a local change that has taken place (1) and designing an investigation to understand causes / threats / impacts (1) and therefore helped understand the expected pattern before investigating (1). • Use of a model e.g. bid rent model / plant succession (1) used as a basis for comparing a real-world situation to theory (1) and an opportunity to challenge the assumption (1). • The Butler Model helped us understand tourism development (1) and then this could be compared to our own ideas about local change (1) and we could plan locations to collect data to test ideas (1).	**3**

	• Literature surveys reviewed models (1) to understand more about a location and the issues to be investigated (1) and the suitability of possible questions (1). Note the title / question is just to provide a context for the investigation and the subsequent parts that follow. There is no separate credit for this.	

Question Number	Answer	Mark
3(b)	**AO3 (3 marks)** Nature of quantitative techniques utilised will vary depending on the location as well as the context of the investigation. • Environmental quality scores from a number of respondents were used (1) to find out about attitudes towards rebranding in the city (1) and these were then averaged for each area to produce a total area score (1). • Questionnaires (closed questions) were used to gauge opinions from stakeholders (1) such as impacts of change city (1) and these scores were then totalled to give and overall perception index (1). • Frequency of plant types were recorded along a transect (1) in order to find out about changes in plant types within that coastal ecosystem (1) and the results were then collated with other groups to develop an overall index (1). • Traffic loudness was recorded in dB using our mobile phones (1). There was a dedicated app which allowed this to be carried out every 100m along a transect (1) and the results were then used to develop and average score for each road junction and location (1). • Systematic sampling at regular intervals (1) was used to collect data about the condition of a footpath (1) so that we could measure the degree of change along the transect and reach a conclusion (1). Accept other valid ideas.	**3**

<table>
<tr><th>Question number</th><th colspan="2">Answer</th></tr>
<tr><td>3(c)</td><td colspan="2">AO3 (6 marks)
Marking instructions
Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.
Indicative content guidance
Content depends on students' choice of research question. Responses may include one or more of the following ideas:
Used internet resources to find out more about the population / people of an area, e.g. local census statistics in order to design a comparative sampling strategy. This was then used to select a location and individual sites.
Secondary information was used in determining the historical context of the area, providing comparative context for selection of sites.
Secondary data / sources were used to contextualise and challenge primary fieldwork data, and then helped to decide the sites and overall location.
Local research data / sources can be used to give baseline data, e.g. to work out rates of coastal recession using oral histories and then that helps with choosing locations.
Photographs were used which allowed us to complete a site risk assessment before undertaking the fieldwork.
Use of random number tables to select sites for the deployment of quadrats for the sites.
Undertook a pilot survey to determine best locations based on safety for sampling.
Used old projects / studies in the area to find safe locations to work in.
Used GIS to identify road and population distribution and therefore select sites.
Nature of responses will be heavily dependent on the context of the fieldwork and the environment in which it was undertaken. However, examiners should reward for detailed clear and specific data and information which are supported with depth and detail in terms of factual accuracy and realism linked to planning the sites for primary data collection.
NB: Expect a strong link to location for 6 marks.</td></tr>
<tr><th>Level</th><th>Mark</th><th>Descriptor</th></tr>
<tr><td></td><td>0</td><td>No rewardable material.</td></tr>
<tr><td>Level 1</td><td>1–2</td><td>Limited understanding of the relationships between geographical questions and the background information, geographical context and research question (AO3)
Uses a limited range of fieldwork research skills and techniques to obtain information that may link to, but not support, the investigation of the research question. (AO3)</td></tr>
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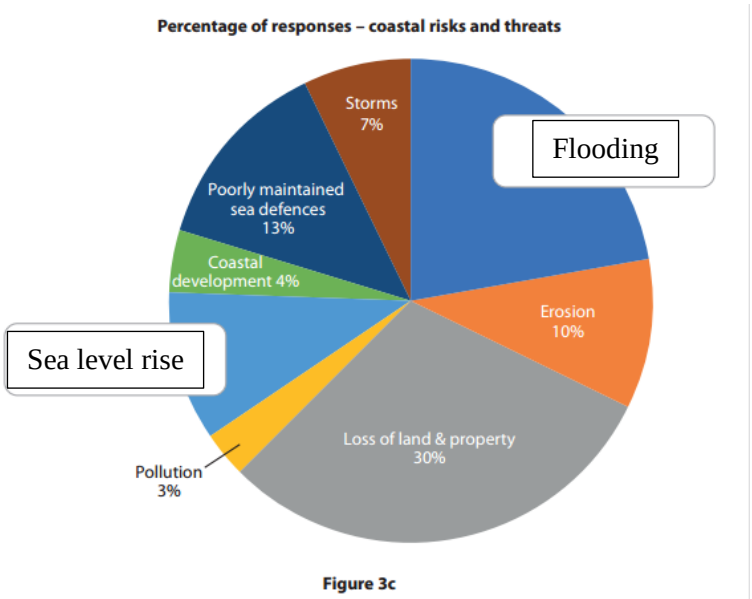
		• Limited evidence of an ability to draw conclusions and the evaluation is simplistic, limited to one stage in the route to enquiry. (A03)
Level 2	**3–4**	• Some understanding of the relationship between the background information, geographical context and research question (AO3) • Uses some fieldwork research skills and techniques to obtain information that may link to, but not support, the investigation of the research question. (AO3) • Some evidence of an ability to draw conclusions and the evaluation is relevant, but restricted to one or two stages in the route to enquiry. (A03)
Level 3	**5–6**	• A full understanding of the relationship between the background information, geographical context and research question (AO3) • Evaluates fieldwork research skills and techniques to obtain information that may link to, but not support, the investigation of the research question. (AO3) • Clear evidence of an ability to draw conclusions and the evaluation is full, across a number of stages in the route to enquiry. (A03)

<table>
<tr><th>Question number</th><th colspan="2">Answer</th></tr>
<tr><td>3(d)</td><td colspan="2">AO3 (12 marks)
Marking instructions
Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.
Indicative content guidance
Content depends on students' choice of research question. Accuracy and reliability could include some the following:
Accuracy and reliability will be affected by sampling and frequency of different fieldwork methods.
Locational considerations, especially precise details of sites, or transects and sampling locations will impact on strength of conclusions.
Considerations may also include temporal decision-making, e.g. when it is safe or appropriate to collect data and information which is likely to be most accurate and or reliable.
Methods may consider the balance of primary or secondary data and information, as well as reflection on quantitative and qualitative approaches in influencing outcomes in terms of reliability.
Methods could include the design of specific methods e.g. questionnaires, interviews, EQS etc and comments on ease of analysis, reduction in subjectivity due to good design.
Consideration of recording sheets (methods), adaptation, use of weightings to give particular focus linked to the question or aim.
Consideration of equipment, and how that is used to minimise operator error during and improve reliability of conclusions.
Note: the focus for this particular question means that the bullet 4 in the Levels descriptors below are most relevant to the desired response.</td></tr>
<tr><td>Level</td><td>Mark</td><td>Descriptor</td></tr>
<tr><td></td><td>0</td><td>No rewardable material.</td></tr>
<tr><td>Level 1</td><td>1–4</td><td>Limited understanding of the relationships between geographical questions and the background information, geographical context and research question (AO3)
Uses a limited range of fieldwork research skills and techniques to obtain information that may link to, but not support, the investigation of the research question. (AO3)
Limited interpretation, analysis based on the data / information collected. (AO3)
Limited evidence of an ability to draw conclusions and the evaluation is simplistic, limited to one stage in the route to enquiry. (A03)</td></tr>
<tr><td>Level 2</td><td>5–8</td><td>Some understanding of the relationship between the background information, geographical context and research question (AO3)
Uses some fieldwork research skills and techniques to obtain information that may link to, but not support, the investigation of the research question. (AO3)</td></tr>
</table>

		• Interpretation and analysis based on the data / information collected form part of the response(AO3) • Some evidence of an ability to draw conclusions and the evaluation is relevant, but restricted to one or two stages in the route to enquiry. (A03)
Level 3	**9–12**	• A full understanding of the relationship between the background information, geographical context and research question (AO3) • Evaluates fieldwork research skills and techniques to obtain information that may link to, but not support, the investigation of the research question. (AO3) • Critically considers the role of interpretation, analysis based on the data / information collected. (AO3) • Clear evidence of an ability to draw conclusions and the evaluation is full, across a number of stages in the route to enquiry. (A03)

Question Number	Answer	Mark
4(a)(i)	**AO3 (1 mark)** Award **1** mark for each idea. Maximum **1** mark. • Shows steep cliffs which crumble / collapse / rock fall risk (1). • May have plants and animals which sting, bite, give skin reactions, thorn injuries (1). • Plants which can cut legs, especially if students are wearing shorts (1). • Incoming tide presents a trapping issue / drowning (no beach at high tides) (1). • Trips / slips / slippery rocks on steep slopes (1). • Uninhabited area so getting lost (1) • No phone signal to summon help (1) • Poor weather / heavy rain / cold (linked to dark clouds) (1) Accept other possibilities if linked directly to Figure 3a. Credit idea of small area and therefore sample "risk" problem.	**1**

Question Number	Indicative content	Mark
4(a)(ii)	**AO3 (4 marks)** Award **1** mark for identification of a problem to linked to the resource and further expansion marks up to a maximum of **2** marks. • Students may not be able to correctly identify the rock type (1) so it limits the validity of the technique (1). • Cliff colour is not relevant to stability (1) therefore the data doesn't mean anything (1). • Gap in cliff slope, no 50 (1) means difficult when recording information (1). • Students may not be able to correctly measure slope angle as they don't have a clinometer (1) therefore this variable cannot be used (1). • There is no weighting of individual factors (1) so it means that all will be assumed to be equally important (1). • Beach width has no number next to it (1) therefore it's a qualitative score – not very useful (1). Credit other valid ideas linked Figure 3b.	**4**

Question Number	Answer	Mark
4(b)(i)	**AO3 (2 marks)** 1 mark for each correct labelling on diagram.  **Figure 3c** Note: percentages not required for credit.	**2**

4(b)(ii)	**AO3 (1 mark)** 1 mark for correct addition • Total = 222 (1) Note: working-out not required for credit	**1**

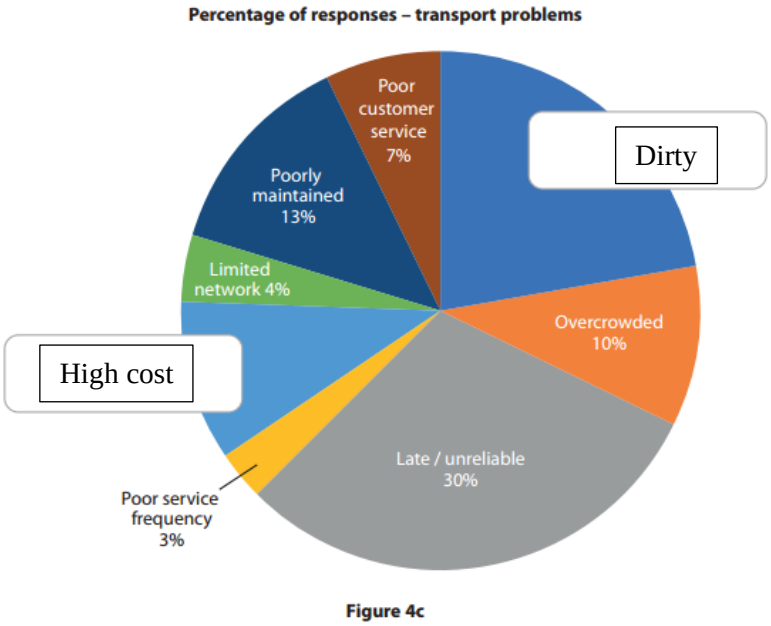
4(b)(iii)	**AO3 (1 mark)** 1 mark for correct range • Range = 60 (1) Note: working-out not required for credit	**1**

Question Number	Answer	Mark
4(c)	**AO3 (2 marks)** Award **1** mark for identification of a limitation and a further expansion mark up to a maximum of **2** marks. • A relatively small sample size (1) means that it may not be representative of people in the area (1).	**2**

	• No indication of when the data was collected (1) which could impact on the type of responses / attitudes (1). • No indication of who was being asked (locals vs visitors etc) (1) and this could introduce bias and is may not be based on a fair sample (1). • No opportunity to indicate “no idea” as a category (1) so respondents are forced into giving a risk / threat which may be something they have no real knowledge about (1). • Collected in one town only (1) which may not be representative of the sample area / people (1). Accept other valid ideas.	

Question Number	Answer	Mark
5(a)(i)	**AO3 (1 mark)** Award **1** mark for each idea. Maximum **1** mark. • Getting lost in an unfamiliar area (1). • Pickpockets / items stolen (1). • Sunburn / sunstroke (1). • Trips / slips / bumps on uneven urban surfaces (1). • Bumping into street furniture and / or other pedestrians (1). • Being hit by moving objects such as swing doors and cyclists or cars (likely at end of street) (1). • "Stranger danger" (1). Accept other possibilities if linked to Figure 4a. Credit idea of small area and therefore sample "risk" problem.	**1**

Question Number	Indicative content	Mark
5(a)(ii)	**AO3 (4 marks)** Award **1** mark for identification of a problem to linked to the resource and further expansion marks up to a maximum of **2** marks. • Students may not be able to correctly identify the architectural quality (1) so it limits the validity of the technique (1). • Cleanliness is not easy to measure (1) so can't be used to reach valid conclusions (1) • Good street furniture is not a feature of cleanliness (1) so the table has been incorrectly designed (1) • Vitality can't easily be measured (1) so any results from this piece of evidence would be subjective / inconclusive (1) • Students may not be able to correctly measure conserved heritage as they are unfamiliar with buildings in the whole survey area (1) therefore this variable cannot be used (1) so it limits the validity of the overall score (1). • Conserved heritage has a between 10% and 5% (1) so recording would be unclear in this category (1) • There is no weighting of individual factors (1) so it means that all will be assumed to be equally important (1) and this may not be correct reducing the validity of the score (1). Credit other valid ideas.	**4**

Question Number	Answer	Mark
5 (b)(i)	**AO3 (2 marks)** 1 mark for each correct labelling on diagram.  **Figure 4c** Note: percentages not required for credit.	**2**

5 (b)(ii)	**AO3 (1 mark)** 1 mark for correct addition • Total = 222 (1) Note: working-out not required for credit	**1**

5 (b)(iii)	**AO3 (1 mark)** 1 mark for correct range • Range = 60 (1) Note: working-out not required credit	**1**

Question Number	Answer	Mark
5 (c)	**AO3 (2 marks)** Award **1** mark for identification of a limitation and a further expansion mark up to a maximum of **2** marks. • A relatively small sample size (1) means that it may not be representative of people in the area (1).	**2**

	• No indication of when the data was collected (1) which could impact on the type of responses / attitudes (1). • No indication of who was being asked (locals vs visitors etc) (1) and this could introduce bias and is may not be based on a fair sample (1). • No opportunity to indicate “no idea” as a category (1) so respondents are forced into giving a risk / threat which may be something they have no real knowledge about (1). • Collected in one town only (1) which may not be representative of the sample area / people (1). Accept other valid ideas.	