



Pearson
Edexcel

Mark Scheme (Results)

Summer 2018

Pearson Edexcel GCSE

In Geography A (1GA0/03)

**Paper 03: Geographical Investigations: Fieldwork
and UK Challenges**

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Summer 2018

Publications Code 1GA0_03_1806_MS

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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.

Question number	Answer	Mark
1(a)(i)	<p>No credit for naming a quantitative method.</p> <p>Award 1 mark for identification of a limitation and a further mark for an explanation of the limitation, up to a maximum of 2 marks.</p> <p>When measuring the width of the river it was not always clear if the measuring tape was tight and not sitting on the surface of the water (1) this could have caused the measurement to be greater/larger than the actual (1) / this resulted in inaccurate results (1).</p> <p>Other acceptable responses might be: velocity or depth.</p> <p>Do not accept:</p> <p>Reference to collection of sediment.</p> <p>Accept any other appropriate response.</p>	(2)

Question number	Answer	Mark
1(a)(ii)	<p>Award 1 mark for identification of an improvement and further mark for an explanation of the improvement, up to a maximum of 2 marks.</p> <p>When measuring the width of the river we could have recorded multiple measurements of the river width (1) which would have provided a more precise profile of the channel (1).</p> <p>Other acceptable responses might be: velocity, depth or wetted perimeter.</p> <p>Accept any other appropriate response.</p>	(2)

Question number	Answer	Mark
1(b)	<p>No credit for naming a qualitative method.</p> <p>Award 1 mark for identification of a qualitative method linked to a river landform and further mark(s) for an explanation of how the method supported understanding of landform formation/use of processes, up to a maximum of 3 marks.</p> <p>The use of annotated photograph(s)/field sketch(s) to record features of a meander (1) evidence of process identified such as undercutting/collapse of river bank/fastest flow of water on the outside bend (1) which helped to provide evidence of erosional processes (1).</p> <p>We used a Powers of Roundness grading sheet to classify rock shape (1) this showed that the bedload got rounder downstream (1) supporting the Bradshaw Model (1).</p> <p>Other acceptable responses might be: waterfalls, slip off slope, oxbow lake, braided channel, flood plain and management techniques linked to river landforms e.g. channelisation, levees, washlands.</p> <p>Accept any other appropriate response.</p>	(3)

Question number	Answer	Mark
1(c)	<p>Award 1 mark for identification of a process that is linked to a location/ impact on people and further mark(s) for an explanation, up to a maximum of 3 marks.</p> <p>Commercial/residential properties located close the river channel are vulnerable to flooding (1) which could lead to damages to the properties and possessions (1) leading to potential loss of income/people's possessions (1).</p> <p>Roads/rail networks are often damaged by flood waters (1) which can result in disruption for commuters (1) due to delays in getting to work (1).</p> <p>There is a loss of farmland/ soil (1) due to the erosion of river banks over time (1) leading to loss of livestock/reduction in crop yields (1).</p> <p>Accept any other appropriate response.</p>	(3)

Question number	Indicative content
1(d)	<p style="text-align: center;">A03 (4 marks)/A04 (4 marks)</p> <p>A03</p> <ul style="list-style-type: none"> • Assessing is about deconstructing geographical data and identifying patterns or trends. • Any patterns or trends identified should be supported with geographical theories relating to changes in river characteristics. • Conclusions are made based on the evidence from the data provided. • Links to the changes in the river channel are supported with explanations of physical processes like hydraulic action and abrasion. <p>A04</p> <p>Figure 1a</p> <ul style="list-style-type: none"> • Reference to thumbnail map indicating influence of changing river characteristics, e.g. site 1 near source with no joining tributaries. • The width of the river increases between site 1 and site 5 (e.g. site 1: 325cm – site 5: 1050 cm). • A difference of 725cm between site 1 and site 5. • The depth of the river increases between site 1 and site 5 (e.g. site 1 deepest point – 20cm/site 5 deepest point – 50cm). • A difference of 30cm between site 1 and site 5. • Data supports the characteristic changes from source to mouth with erosion, abrasion and hydraulic action, widening and deepening the river channel further downstream. <p>Figure 1b</p> <ul style="list-style-type: none"> • The angularity of the bedload between site 1 and site 5 shows changes from angular to more rounded. • Data supports the characteristic changes from source to mouth from erosion process of attrition.

Level	Mark	Descriptor
	0	No acceptable response.
Level 1	1-3	<ul style="list-style-type: none"> Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3) Few aspects of the enquiry process are supported by the use of geographical skills to obtain information, which has limited relevance and accuracy. Communicates generic fieldwork findings and uses limited relevant geographical terminology. (AO4)
Level 2	4-6	<ul style="list-style-type: none"> Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) Some aspects of the enquiry process are supported by the use of geographical skills. Communicates fieldwork findings with some clarity, using relevant geographical terminology occasionally. (AO4)
Level 3	7-8	<ul style="list-style-type: none"> Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) All aspects of the enquiry process are supported by the use of geographical skills. Communicates enquiry-specific fieldwork findings with clarity, and uses relevant geographical terminology consistently. (AO4)

Question number	Answer	Mark
2(a)(i)	<p>No credit for naming a quantitative method.</p> <p>Award 1 mark for identification of a limitation and a further mark for an explanation of the limitation, up to a maximum of 2 marks.</p> <p>When measuring the gradient of a beach there is an element of subjectivity in choosing where there's a change in slope (1). This could have caused the measurement to be greater/larger than the actual (1) / this resulted in inaccurate results (1).</p> <p>Other acceptable responses might be: inaccurate use of equipment, conditions under which data is recorded, e.g. variations in tides, windy/wet weather.</p> <p>Do not accept:</p> <p>Reference to collection of sediment.</p> <p>Accept any other appropriate response.</p>	(2)

Question number	Answer	Mark
2(a)(ii)	<p>Award 1 mark for identification of an improvement and a further mark for an explanation of the improvement, up to a maximum of 2 marks.</p> <p>When measuring beach morphology, using a clinometer can cause errors to arise due to inaccurate readings being taken if conducted by only one person (1) this could be improved by the reading being verified by at least two people (1).</p> <p>Other acceptable responses might be: measuring the width of the beach.</p> <p>Accept any other appropriate response.</p>	(2)

Question number	Answer	Mark
2(b)	<p>No credit for naming a qualitative method.</p> <p>Award 1 mark for identification of a qualitative method used and further mark(s) for an explanation of the landform formation/use of processes, up to a maximum of 3 marks.</p> <p>The use of annotated photograph(s)/field sketch(s) to record features of a stack (1) evidence of process identified such as undercutting/wave cut notch at the base of the stack (1) which helped to explain how the stack changes over time (1).</p> <p>We used a Powers of Roundness grading sheet to classify rock shape (1) this showed that the sediment got smaller and rounder (1) because of attrition (1).</p> <p>Other acceptable responses might be: cave, arch, stump, cliff, wave cut platform, beach formation and management techniques linked to coastal landforms e.g. groynes altering the profile of the beach.</p> <p>Accept any other appropriate response.</p>	(3)

Question Number	Answer	Mark
2(c)	<p>Award 1 mark for identification of a process that is linked to a location/ impact on people and further mark(s) for an explanation, up to a maximum of 3 marks.</p> <p>Commercial/residential properties located close the coast are vulnerable to flooding (1) which could lead to damages to the properties and possessions (1) leading to potential loss of income/people's possessions (1).</p> <p>Roads/rail networks are often damaged by coastal flooding (1) which can result in disruption for commuters (1) due to delays in getting to work (1).</p> <p>There is a loss of farmland/ soil (1) due to the recession of cliffs over time (1) leading to loss of livestock/reduction in crop yields (1).</p> <p>Accept any other appropriate response.</p>	(3)

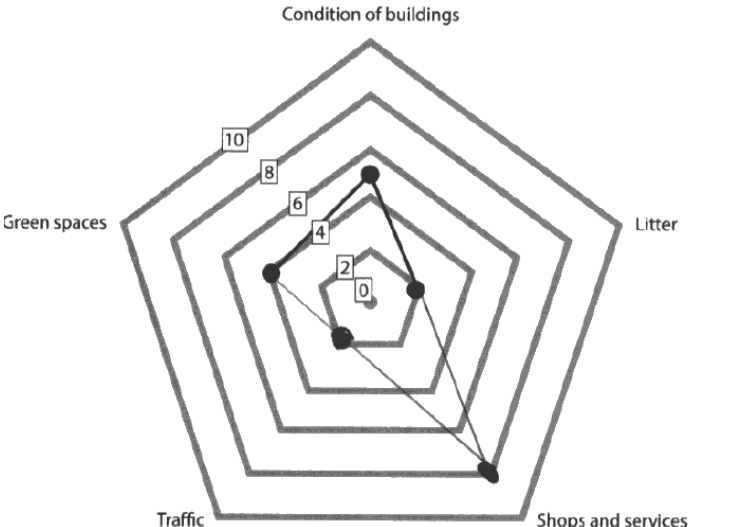
Question number	Indicative content
2(d)	<p style="text-align: center;">A03 (4 marks)/A04 (4 marks)</p> <p>A03</p> <ul style="list-style-type: none"> • Assessing is about deconstructing geographical data and identifying patterns or trends. • Any patterns or trends identified should be supported with geographical theory, relating to coastal form and processes. • Conclusions are made based on the evidence from the data provided. • Links to the changes in the profile of the beach are supported with explanations of physical processes. <p>A04</p> <p>Figure 2a</p> <ul style="list-style-type: none"> • The width of the beach increases between site 1 and site 5 (e.g. site 1: 81m – site 5: 104m). • A difference of 23m between site 1 and site 5. • The gradient of the beach increases between site 1 and site 5 with site 5 having the steepest gradient as you get nearer to the backshore. • Data supports the characteristic changes of beach profile with a steeper profile evident further along the beach from the process of Longshore Drift. <p>Figure 2b</p> <ul style="list-style-type: none"> • The angularity of the sediment between site 1 and site 5 shows changes from angular to very rounded. • Data supports the characteristics changes moving along the coastline from erosion process of attrition.

Level	Mark	Descriptor
	0	No acceptable response.
Level 1	1–3	<ul style="list-style-type: none"> Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3) Few aspects of the enquiry process are supported by the use of geographical skills to obtain information, which has limited relevance and accuracy. Communicates generic fieldwork findings and uses limited relevant geographical terminology. (AO4)
Level 2	4–6	<ul style="list-style-type: none"> Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) Some aspects of the enquiry process are supported by the use of geographical skills. Communicates fieldwork findings with some clarity, using relevant geographical terminology occasionally. (AO4)
Level 3	7–8	<ul style="list-style-type: none"> Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) All aspects of the enquiry process are supported by the use of geographical skills. Communicates enquiry-specific fieldwork findings with clarity, and uses relevant geographical terminology consistently. (AO4)

Question number	Answer	Mark
3(a)	<p>B Newspaper article</p> <p>This is the correct answer because it is the only example of a type of qualitative data. The other options are examples of quantitative data.</p>	(1)

Question number	Answer	Mark
3(b)(i)	<p>Award 1 mark for identification of an advantage/disadvantage and a further one mark for an explanation of each.</p> <p>Accept responses referring to both open and closed questions.</p> <p>Advantages An advantage of questionnaires is you can collect a large sample of answers (1) in a short space of time (1). An advantage of using 'closed' questions is you can quickly quantify the data (1) to be used to make comparisons with other forms of data collected (1).</p> <p>Disadvantages A disadvantage of questionnaires is you cannot always be certain that respondents are telling the truth (1) this may lead to the collection of skewed data (1). A disadvantage of questionnaires is people may interpret questions differently (1) therefore answering based on their own view, which may not have been the original intention of the question (1).</p> <p>Do not accept:</p> <p>References to sampling strategies.</p> <p>Accept any other appropriate response.</p>	(4)

Question number	Answer	Mark
3(b)(ii)	<p>Award 1 mark for identification of a limitation of random sampling and a further 2 marks for an explanation of the limitation, up to a maximum of 3 marks.</p> <p>Random sampling may cause the student to avoid asking particular groups of people (1) because the person collecting the information may unintentionally focus on certain social groups (1) which may lead to unrepresentative data (1).</p> <p>Do not accept:</p> <p>Reference to specific examples e.g. age groups.</p> <p>Accept any other appropriate response.</p>	(3)

Question number	Answer	Mark
3(c)	<p>Award 1 mark for 1 correct point and line drawn. Both points and 3 lines correctly plotted for 2 marks.</p> <p>Allow 1 mark for correctly plotted points but no lines.</p> 	(2)

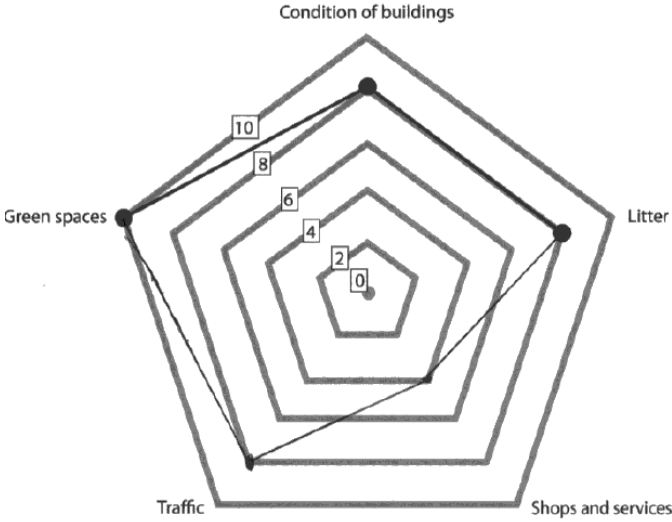
Question number	Indicative content
3(d)	<p style="text-align: center;">A03 (4 marks)/A04 (4 marks)</p> <p>A03</p> <ul style="list-style-type: none"> • Processing and presenting fieldwork data is about using and choosing an appropriate range of graphical techniques to present geographical findings. • Recognition of the use of hand-drawn and computer generated techniques. • Recognition of best way to present numerical data to represent group values and continuous data. • An appreciation that spatial data can be presented with the use of GIS maps. • Recognition of the complexity of completing certain techniques both in terms of time and accuracy. • Recognition of the appropriateness of the data presentation techniques in relation to identifying patterns and trends, and drawing conclusions. <p>A04</p> <ul style="list-style-type: none"> • There is evidence of using different skills and techniques to reach decisions about the advantages and disadvantages of a range of data presentation techniques – maps, GIS, graphs and diagrams. • There is evidence of own fieldwork presentation techniques used and these are linked to the appropriateness for presenting fieldwork data and communicating their findings. • There is evidence of consideration in relation to the effectiveness of the techniques used.

Level	Mark	Descriptor
	0	No acceptable response.
Level 1	1–3	<ul style="list-style-type: none"> • Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3) • Few aspects of the enquiry process are supported by the use of geographical skills to obtain information, which has limited relevance and accuracy. Communicates generic fieldwork findings and uses limited relevant geographical terminology. (AO4)
Level 2	4–6	<ul style="list-style-type: none"> • Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Some aspects of the enquiry process are supported by the use of geographical skills. Communicates fieldwork findings with some clarity, using relevant geographical terminology occasionally. (AO4)
Level 3	7–8	<ul style="list-style-type: none"> • Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • All aspects of the enquiry process are supported by the use of geographical skills. Communicates enquiry-specific fieldwork findings with clarity, and uses relevant geographical terminology consistently. (AO4)

Question number	Answer	Mark
4(a)	<p>B Newspaper article</p> <p>This is the correct answer because it is the only example of a type of qualitative data. The other options are examples of quantitative data.</p>	(1)

Question number	Answer	Mark
4(b)(i)	<p>Award 1 mark for identification of an advantage/ disadvantage and a further one mark for an explanation of each.</p> <p>Accept responses referring to both open and closed questions.</p> <p>Advantages An advantage of questionnaires is you can collect a large sample of answers (1) in a short space of time (1). An advantage of 'closed' questions is you can quickly quantify the data (1) to be used to make comparisons with other forms of data collected (1). An advantage of questionnaires is it allows you the opportunity to clarify questions/ ask further questions (1) this leads to more detailed responses (1).</p> <p>Disadvantages A disadvantage of questionnaires is you cannot always be certain that respondents are telling the truth (1) this may lead to the collection of inaccurate data (1). A disadvantage of questionnaires is people may interpret questions differently (1) therefore answering based on their own view, which may not have been the original intention of the question (1).</p> <p>Do not accept: References to sampling strategies.</p> <p>Accept any other appropriate response.</p>	(4)

Question number	Answer	Mark
4(b)(ii)	<p>Award 1 mark for identification of a limitation of random sampling and a further 2 marks for an explanation of the limitation, up to a maximum of 3 marks:</p> <p>Random sampling can cause bias (1) because the person collecting the information may unintentionally focus on certain social groups (1) which may lead unrepresentative data (1).</p> <p>Accept any other appropriate response.</p>	(3)

Question number	Answer	Mark
4(c)	<p>Award 1 mark for 1 correct point and line drawn. Both points and 3 lines correctly plotted for 2 marks.</p> <p>Allow 1 mark for correctly plotted points but no lines.</p> 	(2)

Question number	Indicative content
4(d)	<p style="text-align: center;">A03 (4 marks)/A04 (4 marks)</p> <p>A03</p> <ul style="list-style-type: none"> • Processing and presenting fieldwork data is about using and choosing an appropriate range of graphical techniques to present geographical findings. • Recognition of the use of hand-drawn and computer generated techniques. • Recognition of best way to present numerical data to represent group values and continuous data. • An appreciation that spatial data can be presented with the use of GIS maps. • Recognition of the complexity of completing certain techniques both in terms of time and accuracy. • Recognition of the appropriateness of the data presentation techniques in relation to identifying patterns and trends, and drawing conclusions. <p>A04</p> <ul style="list-style-type: none"> • There is evidence of using different skills and techniques to reach decisions about the advantages and disadvantages of a range of data presentation techniques – maps, GIS, graphs and diagrams. • There is evidence of own fieldwork methods used and these are linked to the appropriateness for presenting fieldwork data and communicating their findings. • There is evidence of consideration in relation to the effectiveness of the techniques used.

Level	Mark	Descriptor
	0	No acceptable response.
Level 1	1–3	<ul style="list-style-type: none"> Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3) Few aspects of the enquiry process are supported by the use of geographical skills to obtain information, which has limited relevance and accuracy. Communicates generic fieldwork findings and uses limited relevant geographical terminology. (AO4)
Level 2	4–6	<ul style="list-style-type: none"> Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) Some aspects of the enquiry process are supported by the use of geographical skills. Communicates fieldwork findings with some clarity, using relevant geographical terminology occasionally. (AO4)
Level 3	7–8	<ul style="list-style-type: none"> Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) All aspects of the enquiry process are supported by the use of geographical skills. Communicates enquiry-specific fieldwork findings with clarity, and uses relevant geographical terminology consistently. (AO4)

Question number	Answer	Mark
5(a)(i)	B 0.5 tonne This is the correct answer because students are doing the subtraction between 1.4 to 0.9. The other options are incorrect for this subtraction.	(1)

Question number	Answer	Mark
5(b)	Award 1 mark for each point identified, up to a maximum of 2 marks: To reduce carbon emissions/ (air) pollution (1). To improve air quality (1). To reduce traffic congestion (1). To improve public health (1). To reduce the use of fossil fuels (1). Efficient use of resources (1). Government policy/ campaigns (1). To reduce global warming (1). Do not accept: Environmentally friendly. Accept any other appropriate response.	(2)

Question number	Answer	Mark
5(c)(i)	C 69 million This is the correct number for the year 2025. The rest are incorrect.	(1)

Question number	Answer	Mark
5(c)(ii)	<p>Award 1 mark for the identification of a reason/pressure and a further mark(s) for an explanation, up to a maximum of 3 marks.</p> <p>An increase in population could lead to a rise in more intensive farming (1) which could result in the loss of natural habitats (1) due to a need in more agricultural land to grow crops (1).</p> <p>Other responses might include:</p> <p>Increased demand for energy for transport (1) plus development (2)</p> <p>Increased use of electrical devices (1) plus development (2)</p> <p>Increased use of water for domestic purposes (1) plus development (2)</p> <p>Accept any other appropriate response.</p>	(3)

Question number	Answer	Mark
5(d)	30 064	(1)

Question number	Answer	Mark
5(e)	<p>Award 1 mark for each identification of an advantage and a further mark for explanation of each advantage, up to a maximum of 4 marks.</p> <p>One advantage of building on brownfield sites is it conserves the destruction of the countryside (1) which means the land can be used for agriculture or recreational purposes (1).</p> <p>One advantage of building on brownfield sites is it removes old derelict buildings which are an eyesore on the landscape (1) which helps to improve the appeal of the local area (1).</p> <p>Other responses might include:</p> <p>Utility infrastructure already in place (1) plus development (1)</p> <p>Potentially fewer planning issues (1) plus development (1)</p> <p>Proximity to other businesses (1) plus development (1)</p> <p>Reduced impact on wildlife habitats (1) plus development (1)</p> <p>Transport networks (1) plus development (1)</p> <p>Multiplier effect (1) plus development (1)</p> <p>Do not accept:</p> <p>Environmentally friendly in isolation.</p> <p>Accept any other appropriate response.</p>	(4)

Question number	Indicative content
5(f)	<p data-bbox="512 271 1219 304">AO2 (4 marks)/AO3 (4 marks)/AO4 (4 marks)</p> <p data-bbox="416 338 480 365">AO2</p> <ul data-bbox="464 371 1305 1077" style="list-style-type: none"> <li data-bbox="464 371 1305 495">• The UK's population is approximately 64 million and over the next 20 years is expected to rise. This will put increasing pressure on the ability for cities to meet the needs of its people. <li data-bbox="464 501 1305 624">• Rising populations will inevitably lead to an increase in resource consumption, which will need to be sourced from renewable sources to maintain the UK's sustainable development strategy goals. <li data-bbox="464 631 1305 719">• Sustainability refers to 'meeting the needs of the present without compromising the ability of future generations to meet their own needs'. <li data-bbox="464 725 1305 813">• The rise in affluence has increased the ability for people to own a car which is contributing towards increased CO₂ emissions in UK cities. <li data-bbox="464 819 1305 943">• The development of new technologies like hybrid and electric vehicles will be key to reducing air pollution and contributing towards creating new employment and boosting local economies. <li data-bbox="464 949 1305 1077">• A need to create energy security, but at the same time reducing the use of fossil fuels and creating a more sustainable energy mix to meet the UK's climate change challenges. <p data-bbox="416 1111 480 1137">AO3</p> <ul data-bbox="464 1144 1305 1559" style="list-style-type: none"> <li data-bbox="464 1144 1305 1267">• The role of sustainable transport schemes in contributing towards UK sustainability is key but other factors are equally important and it is tackling the key contributors that will be important to achieving the UK goals. <li data-bbox="464 1274 1305 1361">• Improved education about the use of public transport will be vital in contributing towards more sustainable living in cities. <li data-bbox="464 1368 1305 1456">• The adoption of greener transport will play a key role in improving the health of those living in cities, potentially reducing respiratory related diseases. <li data-bbox="464 1462 1305 1559">• The use of greener transport will contribute towards maintaining the biodiversity of cities and protecting wildlife species. <p data-bbox="416 1592 480 1619">AO4</p> <ul data-bbox="464 1626 1305 2040" style="list-style-type: none"> <li data-bbox="464 1626 1305 1816">• Figure 5d indicates several ways that the use of sustainable transport schemes like the hybrid buses in London will contribute towards the reduction of CO₂ emissions in cities, e.g. diesel-electric hybrid technology which will reduce annual carbon dioxide (CO₂) emissions by around 20,600 tonnes. <li data-bbox="464 1823 1305 2013">• Figure 5d indicates that whilst the use of greener technology is important in moving towards increased sustainability it is also the action of humans that are key to achieving these goals, e.g. all drivers complete the smarter driving course, encouraging more efficient driving reducing carbon emissions. <li data-bbox="464 2020 1305 2040">• Figure 5d indicates that sustainable transport schemes

Question number	Indicative content
	<p>require the support of city residents for them to be effective in contributing towards achieving sustainability, e.g. approximately 2.3 billion people use the Transport for London bus network every year.</p> <ul style="list-style-type: none"> • Figure 5e demonstrates the key contributors towards production of CO² emissions in cities like London, with transport contributing 21% of the total CO² emissions produced in the city. • Figure 5e demonstrates the role of cars and motorcycles contributing towards 47% of the total 21% of CO² for transport overall. • Figure 5e demonstrates that whilst developing sustainable transport schemes is important in reducing CO² emissions other domestic and industrial sectors also play a vital role with contributions higher than transport – domestic 37%, industry 42%. Supporting the view that other factors other than transport are important. • Figure 5f supports the data from Figure 5e that other factors other than transport are important to achieving UK sustainability – the use of LED lights for street lighting. • Figure 5f supports the points made in Figure 5e that the use of a combination of sustainable transport schemes will contribute towards reducing air pollution in UK cities, which will in turn improve citizens' health.

Level	Mark	Descriptor
	0	No acceptable response.
Level 1	1–4	<ul style="list-style-type: none"> • Demonstrates isolated elements of understanding of concepts and the interrelationship between places, environments and processes. (AO2) • Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	5–8	<ul style="list-style-type: none"> • Demonstrates elements of understanding of concepts and the interrelationship between places, environments and processes. (AO2) • Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	9–12	<ul style="list-style-type: none"> • Demonstrates accurate understanding of concepts and the interrelationship of places, environments and processes. (AO2) • Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

Marks for SPGST		
Performance	Marks	Descriptor
SPaG 0	0	<p><i>No marks awarded:</i></p> <ul style="list-style-type: none"> • Learners write nothing. • Learner's response does not relate to the question. • Learner's achievement in SPaG does not reach the threshold performance level, for example errors in spelling, punctuation and grammar severely hinder meaning.
SPaG 1	1	<p><i>Threshold performance:</i></p> <ul style="list-style-type: none"> • Learners spell and punctuate with reasonable accuracy. • Learners use rules of grammar with some control of meaning and any errors do not significantly hinder meaning overall. • Learners use a limited range of specialist terms as appropriate.
SPaG 2	2–3	<p><i>Intermediate performance:</i></p> <ul style="list-style-type: none"> • Learners spell and punctuate with considerable accuracy. • Learners use rules of grammar with general control of meaning overall. • Learners use a good range of specialist terms as appropriate.
SPaG 3	4	<p><i>High performance:</i></p> <ul style="list-style-type: none"> • Learners spell and punctuate with consistent accuracy. • Learners use rules of grammar with effective control of meaning overall. • Learners use a wide range of specialist terms as appropriate.