Pearson Edexcel

Mark Scheme (Results)

Summer 2022

Pearson Edexcel GCSE
In Geography A (1GA0)

Paper 03: Geographical Investigations:
Fieldwork and UK Challenges

Edexcel and BTEC Qualifications

Edexcel and BTEC qualifications are awarded by Pearson, the UK's largest awarding body. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information visit our qualifications websites at www.edexcel.com or www.btec.co.uk. Alternatively, you can get in touch with us using the details on our contact us page at www.edexcel.com/contactus.

Pearson: helping people progress, everywhere

Pearson aspires to be the world's leading learning company. Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your students at: www.pearson.com/uk

Summer 2022
Publications Code 1GA0_03_2206_MS

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)	**No credit just for naming the fieldwork method.** Award 1 mark for identification of a variable and how that variable is measured and further mark for a development of the method, up to a maximum of 2 marks. One possible data collection method the students could have used is measuring the width of the river placing a tape measure (1) either side of the riverbanks at different sites (1). One possible data collection method the students could have used is measuring the depth of the river placing a metre ruler (1) at equal intervals along the width of the river (1). The students could have measured the velocity of the river using a dog biscuit (1) recording how fast it travelled over a set distance (1). Candidates could have measured discharge of the river by using a tape measure to measure the width of the river (1) and the velocity of the river by using a flowmeter (1) **Accept an example of secondary data** eg land use map to find out about the area surrounding the river (1) this would allow them to consider the potential of flood risk/or runoff (1) Accept any appropriate quantitative method e.g. field sketches, photographs **Accept any other appropriate response.**	**(2)**

Question number	Indicative content
1(b)	**AO3 (4 marks)/AO4 (4 marks)** **This question requires candidates to evaluate which one of the enquiry questions would be most suitable.** **Harwood Beck is a river that flows in a south easterly direction from 81 33 to 85 31.** **1. Does the discharge of Harwood Beck increase downstream?** **2. Does the risk of flooding to rural settlements increase downstream?** Candidates may demonstrate AO3 and AO4 through the following examples: • For enquiry question 2 **(Does the risk of flooding to rural settlements increase downstream?)** the number of settlements near the river is quite limited therefore, the risk of flooding would be minimal ***(AO3.1d– making judgements)***, evident by main land use being farmland and minor/ secondary roads ***(AO4.1d – communicate findings)*** • For enquiry question 2 **(Does the risk of flooding to rural settlements increase downstream?)** the area surveyed appears to be near the upper course of the river which may not give an accurate picture of the extent to which flooding affects rural settlements downstream (***AO3.1d – making judgements)***, this is indicated by the high contour lines with the surrounding land ranging from 430 m high increasing to 470 m either side of the river indicating a V-shaped valley ***(AO4.1d –communicate findings)*** • For enquiry question 1 **(Does the discharge of Harwood Beck increase downstream?)** the area surveyed appears near the upper course of the river which may not give an accurate representation of the change in discharge downstream (***AO3.1d – making judgements)***, this is indicated by the high contour lines with the surrounding land ranging from 430 m high increasing to 470 m either side of the river indicating a V-shaped valley ***(AO4.1d –communicate findings)*** It is anticipated that many candidates will put forward an argument for the second enquiry question being the most suitable. However, candidates can argue for the first enquiry question. The level and awarding of marks will be dependent upon the degree to which candidates provide clear communication of their findings (A03) that is supported by evidence from the OS map (A04).

Level	Mark	Descriptor
	0	No acceptable response.
Level 1	1–3	• 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	• 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	• 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)

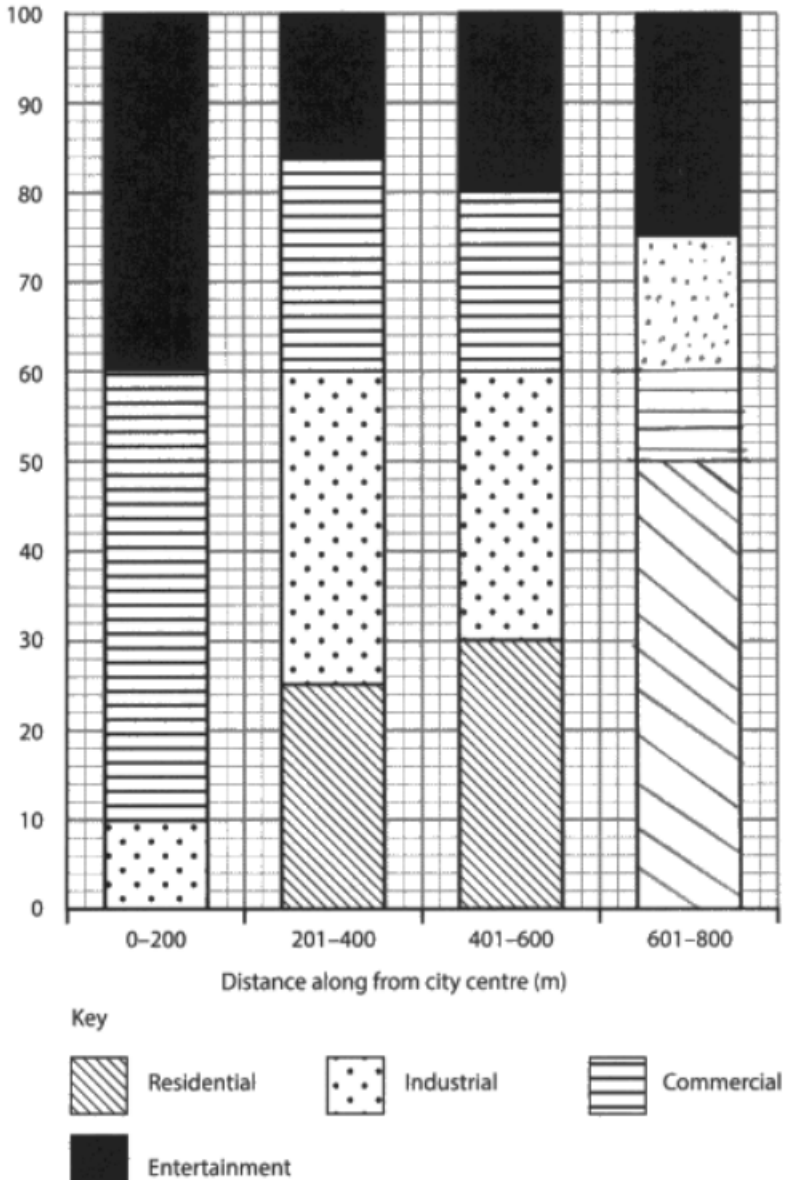
Question Number	Answer	Mark
2 (a)	**No credit for naming the fieldwork method.** Award 1 mark for identification of a variable and how that variable is measured and further mark for a development of the method, up to a maximum of 2 marks. One possible data collection method the students could have used is measuring the changes to sediment size along the beach (1) by collecting a sample at each site and recording observations (1). One possible data collection method the students could have used is measuring the profile of the beach (1) calculating the width and changes to the angle of slope (1). Accept an example of secondary data eg land use map to find out about the area surrounding the beach (1) this would allow them to consider the potential of flood risk (1) **Accept an example of secondary data** eg land use map to find out about the area surrounding the river (1) this would allow them to consider the potential of flood risk/or runoff (1) Accept any appropriate quantitative method e.g. field sketches, photographs **Accept any other appropriate response.**	**(2)**

Question number	Indicative content
2(b)	**AO3 (4 marks)/AO4 (4 marks)** **This question requires candidates to evaluate which one of the enquiry questions would be most suitable.** **The direction of longshore drift is north to south from 2048 to 2146.** **Does coastal management affect beach morphology?** **Does the sediment size increase from north to south?** Candidates may demonstrate AO3 and AO4 through the following examples: • For enquiry question 1 **(Does coastal management affect beach morphology?)** the coastline of Hornsea has many groynes which would interrupt the natural movement of sediments within a cell leading to changes to the profile of the beach ***(AO3.1d– making judgements)***, evident by the groynes stretched across grid squares 2147 and 2048 ***(AO4.1d – communicate findings)*** • For enquiry question 1 **(Does sediment size increase from north to south?)** the coastline of Hornsea selected would enable students to investigate how sediment size changes from north to south however, the presence of coastal management (the groynes) will interrupt the natural processes and may not provide an accurate representation of expected changes ***(AO3.1d– making judgements)***, evident by the groynes stretched across grid squares 2147 and 2048 ***(AO4.1d – communicate findings)*** It is anticipated that many candidates will put forward an argument for the second enquiry question being the most suitable. However, candidates can argue for the first enquiry question. The level and awarding of marks will be dependent upon the degree to which candidates provide clear communication of their findings (A03) that is supported by evidence from the OS map (A04).

Level	Mark	Descriptor
	0	No acceptable response.
Level 1	1–3	• 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	• 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	• 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)(i)	Award one mark for the details about a fieldwork method that could be used at this site and a further mark for the development of the method, up to a maximum of 2 marks. The students could conduct an environmental quality survey to record the quality of the environment (1) this could be repeated at various points along a transect (1) The students could have conducted a land use survey to record the function of land use at this site (1) this could be compared to older photographs of the same sampling site / these could be categorised into different groups (1) The students could carry out a questionnaire to find out the views of local residents (1) this could have conducted by speaking to every fifth person (1) The students could carry out a pedestrian count to find out the footfall at this site (1) plus development (1) The students could have drawn a field sketch to capture key features of the landscape (1) plus development (1) **Accept any other appropriate response.**	**(2)**

Question number	Answer	Mark
3(a) (ii)	Award one mark for the identification of a problem and a further mark for the development of the problem, up to a maximum of 2 marks. Recording the environmental quality is subjective (1) which could lead to conflicting opinions between different members of the group (1) It may be difficult to determine the land use (1) which could lead to results that are not a true reflection of how the function of land use changes along the transect (1) **Accept any other appropriate response.**	**(2)**

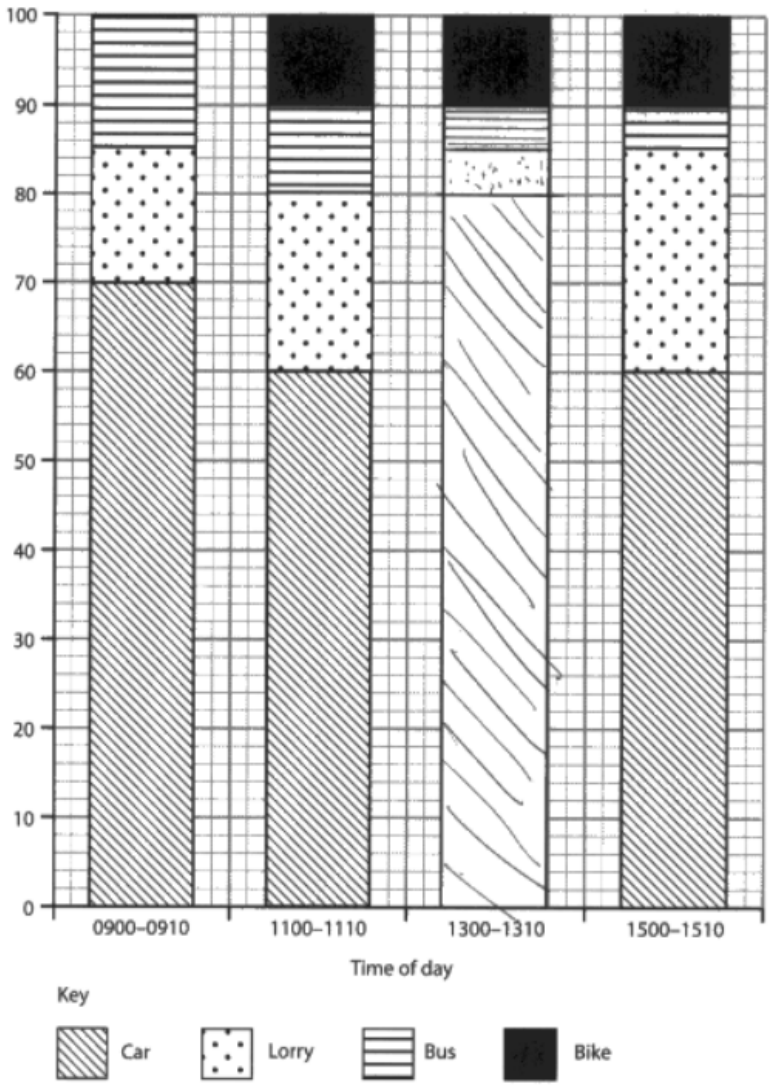
Question number	Answer	Mark
3(b) (i)	Award one mark for each correctly plotted line. Award one mark for a correctly identified category Award one mark for correct shading.  	(3)

Question number	Answer	Mark
3(b) (ii)	Award one mark for the identification of a limitation. Difficult to identify changes (1) Difficult to work out actual percentages (1) Difficult to compare differences between data sets (1) Just shows percentage, rather than raw data (1) Difficult to construct accurately (1) **Accept any other appropriate response.**	**(1)**

Question Number	Answer	Mark
3 (b) (iii)	Award one mark for the identification of an improvement and a further mark for the development of the suggested improvement, up to a maximum of 2 marks. One improvement to this technique would be to choose a different colour scheme (1) allowing for comparison across the transect to be analysed with greater accuracy (1) Changing the divided bar graph to individual pie charts overlayed on a base map (1) enabling greater accuracy in analysing how land use changes along the transect. **Accept any other appropriate response.**	**(2)**

Question number	Answer	Mark
4(a)(i)	Award one mark for the details about a fieldwork method that could be used at this site and a further mark for the development of the method, up to a maximum of 2 marks. The students could conduct an environmental quality survey to record the quality of the environment (1) this could be repeated at various points along a transect (1) The students could have conducted a land use survey to record the function of land use at this site (1) this could be compared to older photographs of the same sampling site / these could be categorised into different groups (1) The students could carry out a questionnaire to find out the views of local residents (1) this could have conducted by speaking to every fifth person (1) The students could carry out a pedestrian count to find out the footfall at this site (1) plus development (1) The students could have drawn a field sketch to capture key features of the landscape (1) plus development (1) **Accept any other appropriate response.**	**(2)**

Question number	Answer	Mark
4(a)(ii)	Award one mark for the identification of a problem and a further mark for the development of the problem, up to a maximum of 2 marks. People may be unwilling to answer the student's questions (1) which could lead to a small sample size that provides an unrepresentative view (1) It may be difficult to keep track of the number of people when recording the pedestrian count (1) which could lead to results that are not a true reflection of the flow of people within the rural settlement (1) **Accept any other appropriate response.**	**(2)**

Question number	Answer	Mark
4(b) (i)	Award one mark for each correctly plotted line. Award one mark for a correctly identified category Award one mark for correct shading.  **Figure 4b**	**(3)**

Question Number	Answer	Mark
4(b) (ii)	Award one mark for the identification of a limitation. Difficult to identify changes (1) Difficult to work out actual percentages (1) Difficult to compare differences between data sets (1) Difficult to construct accurately (1) **Accept any other appropriate response.**	**(1)**

Question Number	Answer	Mark
4(b) (iii)	Award one mark for the identification of an improvement and a further mark for the development of the suggested improvement, up to a maximum of 2 marks. One improvement to this technique would be to choose a different colour scheme (1) allowing for comparison between the times to be analysed with greater accuracy (1) Changing the divided bar graph to individual pie charts overlayed on a base map (1) enabling greater accuracy in analysing how flow of traffic changes during the day (1) **Accept any other appropriate response.**	**(2)**

Question number	Answer	Mark
5(a)	**A** East	**(1)**

Question number	Answer	Mark
5(b)	Award 1 mark for each point identified, up to a maximum of 2 marks: Usually easier to obtain planning permission (1) Reduced costs associated with installing key utilities (1) Reduce potential expansion of the urban area (1) Reduces the need to clear/ use greenfield sites (1) DO NOT REWARD comments like 'cheaper'/'easier' or generic idea of 'pollution' without appropriate context or detail. DO NOT REWARD mirrored statements about the same advantage. There needs to be a distinct and clear difference. **Accept any other appropriate response.**	**(2)**

Question number	Answer	Mark
5(c)	Award 1 mark for each identification of a disadvantage and a further mark for explanation of each disadvantage, up to a maximum of 4 marks. Clearing the site can lead to congestion from construction workers (1) causing journey delays for local residents (1) The redevelopment of the site may lead to conflict with the local residents (1) due to disagreement over the change in use of the site (1) The redevelopment of the site may be restricted (1) due to limited space/ requirements to fit in with the local surroundings (1) An old industrial site requires removal of former works (1) this is time consuming (1) / it is often contaminated (1)	**(4)**

	Accept any other appropriate response.	
Question number	**Answer**	**Mark**
5(d)	Award 1 mark for identification of overall pattern, and a further 1 mark for extension through the use of supporting data, up to a maximum of 2 marks. Number of greenfield sites increased (1) from 200 to 3000 (1) or by 2800 (1) Accept answers that are +/- 100 in terms of accuracy **Credit use of correct data.**	**(2)**

Question number	**Answer**	**Mark**
5(e)	Award 1 mark for a point based on a reason for being against building on greenfield sites and a further 2 marks for explanation of the reason, up to a maximum of 3 marks. Building on greenfield sites are continually being developed on (1) taking away the countryside(1) which leads to deforestation resulting in lose of vital habitats(1) Greenfield sites are causing bidding wars on land (1) driving up the cost of developments (1) which can result in higher prices for buyers (1) ***or*** how there could be demonstrations (1) affecting the daily lives of commuters (1) **If candidates just lift information/quote from the figure, then no marks should be awarded.** **Accept any other appropriate response.**	**(3)**

Question number	Indicative content
5(f)	**AO2** • Greenfield sites are areas of land, usually agricultural or amenity land, which are being considered for urban development. • A brownfield site is defined as "previously developed land" that has the potential for being redeveloped. • Brownfield sites can be considered for redevelopment for not just housing and commercial buildings but also for open spaces intended to be used for recreation. **AO3** • The changes to the UK's population has led to rising demands for housing putting pressure on the use of brownfield and greenfield sites. • The redevelopment of brownfield sites can contribute towards boosting the local economy by creating employment opportunities and lifting nearby property prices. • Brownfield sites can help to reduce urban sprawl. • The UK government have supported the development of brownfield sites by simplifying the planning process in certain areas by establishing pre-grant planning permission for new homes on over 90% of suitable brownfield sites by 2020. **AO4** • Figure 5a illustrates the total area of brownfield sites in 2017 across the different regions of England. One of the highest regions for brownfield sites was the East with 6,398 hectares, compared to the North East with the lowest total area. • The UK's population has increased since 1960 with the rate of growth particularly rising since 2005. This demonstrates the pressure that this will have on providing land to meet housing needs. • Figure 5c indicates the housing requirements in England which demonstrates that despite the rising population, housebuilding is now lower than its peak in the late 1960s. The rate of housebuilding has not been meeting the estimated requirements of 240,000 and 340,000 per year. • Figure 5d highlights that despite the increase in the conversion of brownfield sites, greenfield sites are still being lost to housing development. Data indicated an increase by 58% between 2014-18. • Figure 5e indicates the rising number of completed residential projects on greenfield and brownfield sites. The graph illustrates that despite the concerns from the Campaign to Protect Rural England (CPRE) the number of completed sites on brownfield sites has for many years been higher. However, in 2017/18 there was a significant rise in the number of greenfield sites being used for residential units with the number almost equalling the

Question number	Indicative content
	completed projects on brownfield sites. • Figure 5f illustrates the views of different stakeholders on the debate around the use of brownfield vs greenfield sites.

Level	Mark	Descriptor
	0	No acceptable response.
Level 1	1–4	• 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. (A04)
Level 2	5–8	• 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	• 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	*No marks awarded:* ● 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	*Threshold performance:* ● 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	*Intermediate performance:* ● 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	*High performance:* ● 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.

Pearson Education Limited. Registered company number 872828
with its registered office at 80 Strand, London, WC2R 0RL, United Kingdom