GCSE (9–1)

Geography A (Geographical Themes)

J383/02: The world around us

General Certificate of Secondary Education

Mark Scheme for June 2019

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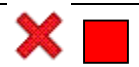
This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.

All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

Annotations

Annotation	Meaning
	Tick, use to show where marks gained for all short answer questions, place where mark(s) gained
	Unclear, use to show mark(s) cannot be awarded as answer is illegible or unclear
	Cross, use for all one mark short answer questions, where 0 is the mark given
	Omission mark to show key idea(s) missing from answer that prevents mark(s) being given
	Level 1 Annotate end of answer with **L1** for overall level.
	Level 2 Annotate end of answer with **L2** for overall level.
	Level 3 Annotate end of answer with **L3** for overall level.
	Level 4 Annotate end of answer with **L4** for overall level.
	Use for developed points for Q1d) 3b) 3c) Use to show developed/well developed ideas for Q 1e) 2b) 3e)
	Use **PLC** to indicate place specific detail for Levels 2, 3 and 4, for Q1e) and Q2b)
	Benefit of doubt, use to show mark(s) given where answer lacked clarity
	Significant amount of material which doesn't answer the question (with red colour highlighter)
	Use to indicate incorrect content for case study response (with red colour highlighter)
	Communicate findings = 1 mark for Q1a)
	Blank page this annotation **must** be used on all blank pages within an answer booklet and on each page of an additional object where there is no candidate response.
	Noted but no credit given, use for answers worth two or more marks, where no credit is given

Subject Specific Marking Instructions

INTRODUCTION

Your first task as an Examiner is to become thoroughly familiar with the material on which the examination depends. This material includes:

- the specification, especially the assessment objectives
- the question paper and its rubrics
- the mark scheme.

You should ensure that you have copies of these materials.

You should ensure also that you are familiar with the administrative procedures related to the marking process. These are set out in the OCR booklet **Instructions for Examiners**. If you are examining for the first time, please read carefully **Appendix 5 Introduction to Script Marking: Notes for New Examiners**.

Please ask for help or guidance whenever you need it. Your first point of contact is your Team Leader.

USING THE MARK SCHEME

Please study this Mark Scheme carefully. The Mark Scheme is an integral part of the process that begins with the setting of the question paper and ends with the awarding of grades. Question papers and Mark Schemes are developed in association with each other so that issues of differentiation and positive achievement can be addressed from the very start.

This Mark Scheme is a working document; it is not exhaustive; it does not provide 'correct' answers. The Mark Scheme can only provide 'best guesses' about how the question will work out, and it is subject to revision after we have looked at a wide range of scripts.

Please read carefully all the scripts in your allocation and make every effort to look positively for achievement throughout the ability range. Always be prepared to use the full range of marks.

LEVELS OF RESPONSE QUESTIONS:

The indicative content indicates the expected parameters for candidates' answers, but be prepared to recognise and credit unexpected approaches where they show relevance.

Using 'best-fit', decide first which set of level descriptors best describes the overall quality of the answer. Once the level is located, adjust the mark concentrating on features of the answer which make it stronger or weaker following the guidelines for refinement.

Highest mark: If clear evidence of all the qualities in the level descriptors is shown, the HIGHEST Mark should be awarded.

Lowest mark: If the answer shows the candidate to be borderline (i.e. they have achieved all the qualities of the levels below and show limited evidence of meeting the criteria of the level in question) the LOWEST mark should be awarded.

Middle mark: This mark should be used for candidates who are secure in the level. They are not 'borderline' but they have only achieved some of the qualities in the level descriptors.

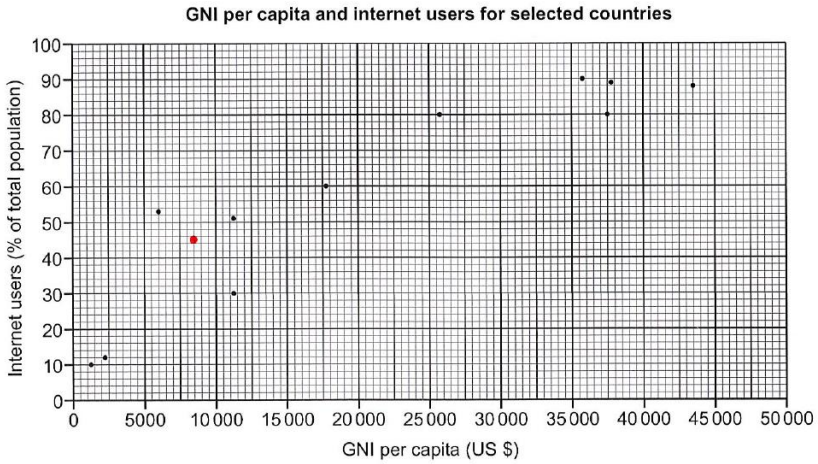
Be prepared to use the full range of marks. Do not reserve (e.g.) highest level marks 'in case' something turns up of a quality you have not yet seen. If an answer gives clear evidence of the qualities described in the level descriptors, reward appropriately.

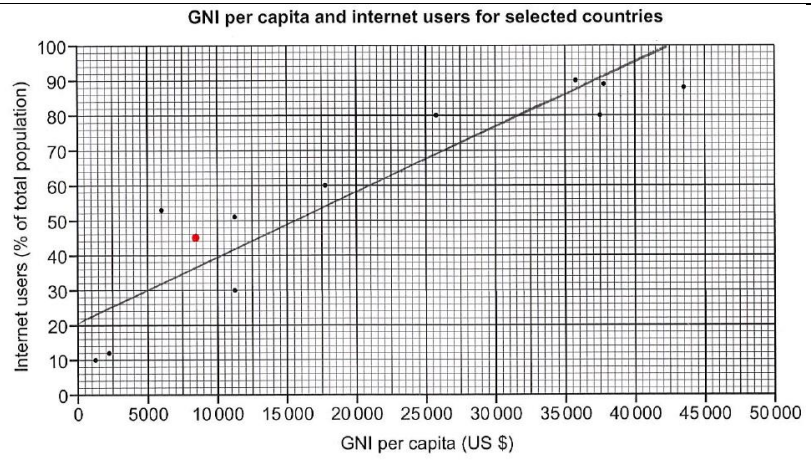
	AO1	AO2	AO3
Comprehensive	A range of detailed and accurate knowledge that is fully relevant to the question.	A range of detailed and accurate understanding that is fully relevant to the question.	Detailed and accurate interpretation through the application of relevant knowledge and understanding. Detailed and accurate analysis through the application of relevant knowledge and understanding. Detailed and substantiated evaluation through the application of relevant knowledge and understanding. Detailed and substantiated judgement through the application of relevant knowledge and understanding.
Thorough	A range of accurate knowledge that is relevant to the question.	A range of accurate understanding that is relevant to the question.	Accurate interpretation through the application of relevant knowledge and understanding. Accurate analysis through the application of relevant knowledge and understanding. Supported evaluation through the application of relevant knowledge and understanding. Supported judgement through the application of relevant knowledge and understanding.
Reasonable	Some knowledge that is relevant to the question.	Some understanding that is relevant to the question.	Some accuracy in interpretation through the application of some relevant knowledge and understanding. Some accuracy in analysis through the application of some relevant knowledge and understanding. Partially supported evaluation through the application of some relevant knowledge and understanding. Partially supported judgement through the application of some relevant knowledge and understanding.
Basic	Limited knowledge that is relevant to the topic or question.	Limited understanding that is relevant to the topic or question.	Limited accuracy in interpretation through lack of application of relevant knowledge and understanding. Limited accuracy in analysis through lack of application of relevant knowledge and understanding. Un-supported evaluation through lack of application of knowledge and understanding. Un-supported judgement through lack of application of knowledge and understanding.

Question			Answer	Mark	Guidance
1	(a)		Mainly found between the tropics of Cancer and Capricorn (✓) in South America, Africa and South East Asia (✓) (C) Along and near the Equator (✓) for example in Central and South America (✓) (C)	3	2 x 1 (✓) for description of distribution pattern (such as statements linked to lines of latitude or continents or major river basins) 1 x 1 (C) for communicating the answer in an appropriate and logical order Two valid descriptive points needed for (C) 1 mark only for list of countries which have rainforests No credit for describing where rainforests are not located.
	(b)		Hot (✓) High temperatures (✓) Wet (✓) High rainfall (✓) High humidity (✓)	2	2 x 1 (✓) per valid climatic condition for tropical rainforest to grow Credit valid data such as over 2000mm and 26-28*C No credit for any explanation
	(c)	(i)	2.8% (✓)	1	(✓) % not required
		(ii)	Rainforests are protected/conserved (✓) Deforestation is controlled/monitored by government (✓) Replanting/Re-afforestation schemes (✓) Rainforests conserved for tourism (✓)	3	3 x 1 (✓) for each valid explanation idea Development awarded with (✓) for further valid explanation No credit for ideas which explain higher rates of deforestation unless coherently linked to sustainable use or management
	(d)		Increased run-off (✓) as there would be less vegetation to intercept rainfall (DEV) Increased soil infiltration/soil moisture (✓) less vegetation to intercept rainfall (DEV) Reduced evapotranspiration (✓) less vegetation to absorb and store water (DEV) Less water recycled (✓) increased run off transfers water out of the	4	2 x 1 (✓) for valid way that cutting down trees changes the water cycle interpreted from resource Fig. 2 2 x 1 (DEV) for explanation of how that changes the water cycle No credit for ideas about changes to nutrient cycle

			deforested area (DEV) Reduced rainfall (✓) reduced evapotranspiration and increased run off means less water vapour condenses in deforested area (DEV)		Two ideas explained needed for full marks
1	**(e)**		**CASE STUDY- coral reef interdependence** **Level 3 (5-6 marks)** An answer at this level demonstrates **thorough** knowledge of interdependence in the coral reef (AO1) and **thorough** understanding of the interdependence of climate, plants and animals (AO2). This will be shown by including **well-developed** ideas about the interdependence of climate, plants and animals in the coral reef. The answer must also include **place-specific** details of the coral reef. Amount of relevant place-specific detail determines credit within level. **Level 2 (3-4 marks)** An answer at this level demonstrates **reasonable** knowledge of interdependence in the coral reef (AO1) and **reasonable** understanding of the interdependence of climate, plants and animals (AO2). This will be shown by including **developed** ideas about the interdependence of climate, plants and animals in the coral reef. Developed ideas but no place-specific detail credited up to middle of level. **Level 1 (1-2 marks)** An answer at this level demonstrates **basic** knowledge of interdependence in the coral reef (AO1) and **basic** understanding of the interdependence of climate, plants and animals (AO2). Named example **only** receives **no** place specific detail credit	**6**	Case study will be marked using 3 levels: **Indicative Content** Response should focus on a named coral reef. Ideas should cover the links between the climate, plants and animals associated with the named example. Credit references to threats to coral reefs if coherently linked to interdependence Maximum of mid-Level 2 - 3 marks if no valid named coral reef given but valid ideas about coral reef interdependence. **Example of well-developed ideas:** The Andros Barrier Reef is a coral reef in the Bahamas off the coast of Florida. The warm sea temperatures of 23 to 29 *C encourage organisms to grow. Sunlight penetrates the clear water so that the phytoplankton can photosynthesise. Phytoplankton are plants and act as primary producers for the rest of the coral reef food chain. Zooplankton and fish feed on the plankton. Other species are carnivores, such as the reef shark, they feed on fish. The fish also use the shelter of the reef for safety and breeding. The fish in turn excrete nitrogen from their gills. This provides nutrients to help the reef plant life to grow and thrive. **Example developed ideas:** The Andros Barrier Reef is a coral reef in the Bahamas. The warm tropical sea temperatures helps organisms to

			This will be shown by including **simple** ideas about the interdependence of climate, plants and animals in the coral reef. **0 marks** No response worthy of credit		grow and sunlight penetrates the clear water so that the phytoplankton can photosynthesise. Phytoplankton are primary producers for the rest of the coral reef food chain. Zooplankton and fish feed on the plankton. Fish also use the shelter of the reef for safety and breeding. Excretion from the fish provides nutrients for the coral reef to grow. **Example of simple ideas:** In the Andros Barrier Reef the plants and animals depend on each other. Fish feed on plankton and in turn predators such as sharks feed on the fish. The warm sea helps the coral reef to grow.

Question			Answer	Mark	Guidance
2	**(a)**	**(i)**	(GNI per capita = $8,500 + Internet Users 45%) (✓)  	**1**	(✓) for accurate plotting of point for Jamaica See red dot in Answer column

		(ii)	 (✓)	**1**	(✓) for accurate best fit line Line will bisect the points to show a positive correlation No credit if line is a curve which bisects the points See line in Answer column
		(iii)	**A:** The higher GNI per capita the higher the % of internet users (✓)	**1**	(✓)
		(iv)	GNI per capita shows how much money people have (✓) which indicates differences in personal wealth/rich and poor people (✓) can show how wealthy a country is for comparison (✓) Percentage of internet users could be linked to personal wealth (✓) or national levels of economic development such as infrastructure and service provision (✓) shows that people need/have access to internet for work, leisure, shopping (✓)	**3**	3 x 1 (✓) for each valid idea of how the development indicators show evidence of economic development No credit for valid development indicators, only for explanation ideas Could be three ideas linked to one valid development indicator or three valid development indicators with an explanation idea for each one Development awarded with (✓) for further valid explanation of how the indicator(s) show evidence of economic development. Economic development will include references to money, wealth, standard of living and/or features of a country's economy such as employment and trade. Credit other valid development indicators which show evidence of economic development such as: Gross National Product/GNP; Gross Domestic Product/GDP; GDP per capita; GNP

					per capita; trade balance; employment type; unemployment, standard of living; absolute poverty, relative poverty; inequality of wealth/Gini Index Credit Human Development Index (HDI) if explanation is clearly focused on economic development such as income. Credit explanations related to social development indicators, if coherently linked to economic development, such as life expectancy linked to government investment in health care. Valid explanations without reference to a development indicator maximum 1 mark.
	(b)		**Case Study- Sustainable strategies in an LIDC or EDC city** **Level 4 (10-12 marks)** An answer at this level demonstrates **comprehensive** knowledge of one challenge for a named LIDC/EDC city (AO1), with a **comprehensive** understanding of how the sustainable strategies are/were designed to overcome the challenge (AO2). There will be a **comprehensive** evaluation of whether the sustainable strategies overcome the city's challenge (AO3) with a **comprehensive** judgement to determine the extent to which the sustainable strategies have overcome the challenge of (AO3). This will be shown by including **well-developed** ideas about the challenge and linked sustainable strategies **and** whether the strategies have overcome the challenge. The answer must also include **place-specific** details for the named city. Amount of relevant place-specific detail determines credit within the level. There is a well-developed line of reasoning which is clear and	**12**	Case study will be marked 4 levels: **Indicative Content** City must be a large named settlement in a valid LIDC or EDC as defined by the IMF. Accept named parts/areas/places within a valid city. Response will include detail about a valid challenge for the named city. The sustainable strategies must be coherently linked to the challenge. Judgement may be speculative but must be based on evidence of the impact of the sustainable strategies on the challenge. If more than one challenge is given, credit the first challenge discussed only. Comprehensive coverage of one sustainable strategy can achieve full marks.

			logically structured. The information presented is relevant and substantiated. **Level 3 (7-9 marks)** An answer at this level demonstrates **thorough** knowledge of one challenge for a named LIDC/EDC city (AO1), with a **thorough** understanding of how the sustainable strategies are/were designed to overcome the challenge (AO2). There will be a **thorough** evaluation of whether the sustainable strategies overcome the city's challenge (AO3) with a **thorough** judgement to determine the extent to which the sustainable strategies have overcome the challenge of (AO3). This will be shown by including **well-developed** ideas about **either** the challenge and linked sustainable strategies **or** whether the strategies have overcome the challenge and **developed** ideas about the **other** focus. The answer must also include some **place-specific** details for the named city. Amount of relevant place-specific detail determines credit within the level. There is line of reasoning presented with some structure. The information presented is in the most-part relevant and supported by some evidence. **Level 2 (4-6 marks)** An answer at this level demonstrates **reasonable** knowledge of one challenge for a named LIDC/EDC city (AO1), with a **reasonable** understanding of how the sustainable strategies are/were designed to overcome the challenge (AO2). There will be a **reasonable** evaluation of whether the sustainable strategies overcome the city's challenge (AO3) with a **reasonable** judgement to determine the extent to which the sustainable strategies have overcome the challenge of (AO3). This will be shown by including **developed** ideas about **either** the challenge and linked sustainable strategies **or** whether the		Maximum mid-Level 2 – 5 marks if valid named LIDC or EDC city not given, but valid ideas about a challenge and sustainable strategies. **Example of well-developed ideas:** Rosario is a large city in Argentina. Social inequality is a major challenge for the city authorities. About 100,000 people live in areas of poor quality housing. These areas of slum housing cover about 10 per cent of the city's area. The Rosario Habitat Programme was set up in 2000 to reduce social inequality. The Programmes' features include: improving roads, sewage systems and storm drains; adding toilets to dwellings; and providing jobs, training and education for 16-25 year olds. Over 150 jobs have been created and about 5,000 people have upgraded their homes. Young people have greater career opportunities for the future which is economically sustainable and the appearance of the slum areas of the city has been improved. However thousands still live in poverty in slum areas, known as 'villas miserias'. Whilst wealthier residents live in gated communities with security guards. Although the Rosario Habitat Program has improved the quality of life for some of the city's poorest residents, social inequality is still a challenge for the city of Rosario. **Example of developed ideas:** Social inequality is a major challenge in the city of Rosario in Argentina. About 100,000 people live in areas of poor quality housing which cover about 10 per cent of the city's area. In 2000 the city set up the Rosario Habitat Programme. This has improved living conditions and provided training and education for 16-25 year olds. About 5,000 people have upgraded their homes. Young people now have greater career opportunities for the future which is economically sustainable. The quality of life for some of the city's poorest residents has improved but thousands still live in poverty in, meaning that social

			strategies have overcome the challenge and **simple** ideas about the other focus. The answer must also include named details within the named city. The information has some relevance and is presented with limited structure. The information is supported by limited evidence. **Level 1 (1-3 marks)** An answer at this level demonstrates **basic** knowledge of one challenge for a named LIDC/EDC city (AO1), with a **basic** understanding of how the sustainable strategies are/were designed to overcome the challenge (AO2). There will be a **basic** evaluation of whether the sustainable strategies overcome the city's challenge (AO3) with a **basic** judgement to determine the extent to which the sustainable strategies have overcome the challenge of (AO3). This will be shown by including **simple** ideas about **either** the challenge and linked sustainable strategies **or** whether the strategies have overcome the challenge. Named example **only** receives **no** place specific detail credit The information is basic and communicated in an unstructured way. The information is supported by limited evidence and the relationship to evidence may not be clear. **0 marks** No response worthy of credit		inequality is still a challenge in the city of Rosario. **Example of simple ideas:** Social inequality is challenge in the city of Rosario. The Rosario Habitat Programme has improved the quality of life for people living in the slums. Some now have toilets, better services and job prospects. But there are still thousands of people in Rosario who live in poverty.
		✎	Spelling, punctuation and grammar and the use of specialist terminology (SPaG) are assessed using the separate marking grid in Appendix 1.	**3**	

Question			Answer	Mark	Guidance
3	**(a)**	**(i)**	C: Sinking cold, dry air (✓)	**1**	(✓)

		(ii)	C: Warm, moist air rises (✓)	**1**	(✓)
		(iii)	Air rises at the equator (✓) Rising air at the equator causes low pressure (✓) Air at the equator moves towards higher latitudes (✓) Air from the equator/Hadley cell mixes with air at temperate latitudes/Ferrel cell (✓) Air from the Ferrel cell moves towards polar latitudes (✓) Air sinks over the poles (✓) Sinking air at the poles causes high pressure (✓) Polar air moves towards lower latitudes (✓) Air from the poles/Polar cell mixes with air at temperate latitudes/Ferrel cell (✓)		3 x 1 (✓) for each valid idea about the movement of air linked to global circulation of the atmosphere
	(b)		Volcanic eruptions (✓) fine particles of ash block out sunlight to reduce surface temperatures (DEV) Sun spot activity / variations in energy from the sun (✓) More sun spots/activity = warmer periods or Less sun spots/activity = cooler periods (DEV) Milankovitch cycles including: Eccentricity / changes in the Earth's orbit (✓) Circular orbit = cooler periods or elliptical orbit = warmer periods (DEV) Obliquity / changes in axial tilt (✓) Greater degree of tilt = warmer periods or less tilt = cooler periods (DEV) Precession / Earth's wobble (✓) Earth tilted closer to sun = warmer periods or Earth tilted further from the sun = cooler periods (DEV)	**4**	2 x 2 (✓) for naming/describing a valid theory 2 x 2 (DEV) for outlining further detail about the theory or how theory causes climate change Two valid theories needed for full marks. No credit for mention of Milankovitch cycles unless reference made to either eccentricity, axial tilt or precession.

	(c)		There is significant flooding in the cartoon (✓) so people would lose their houses (DEV) and there would need to be rescue boats to evacuate people to safety (DEV) People's houses are flooded (✓) will need to evacuate (DEV) will need to live in shelters/temporary accommodation (DEV) People's possessions are ruined (✓) cost of repair/replacement (DEV) may not be full covered by insurance (DEV) Economic activities are disrupted (✓) people may lose their jobs/income (DEV) businesses lose income/close down (DEV) Transport is disrupted (✓) people not be able to access shops and services (DEV) or get to work (DEV) Flood water may be contaminated (✓) could affect people's health (DEV) could affect water supplies (DEV)	**3**	1 x 1 (✓) for using evidence from Fig. 3 2 x 1 (DEV) for explaining how the evidence shows how climate change may affect people's lives. No credit for ideas not linked to evidence from Fig. 3. Credit rising sea levels as evidence from Fig. 3 No credit for ideas about causes of climate change.
	(d)		**Level 3 (6-8 marks)** An answer at this level demonstrates **thorough** understanding of evidence for climate change (AO2) with a **thorough** analysis of the reliability of this evidence (AO3). This will be shown by including **well-developed** ideas about sources of evidence for climate change **and** their reliability. There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated. **Level 2 (3-5 marks)** An answer at this level demonstrates **reasonable** understanding of evidence for climate change (AO2) with a **reasonable** analysis of the reliability of this evidence (AO3). This will be shown by including **developed** ideas about sources of evidence for climate change **and** their reliability. There is a line of reasoning presented with some structure. The information presented is in the most-part relevant and supported by some evidence. **Level 1 (1-2 marks)**	**8**	This will be marked using 3 levels: Indicative Content Sources of climate change evidence referred to in the specification are global temperature data, ice cores, tree rings, paintings and diaries. Credit other valid sources of climate change evidence such as: glacial retreat, ice caps/sea ice changes; rising sea levels, polar bear weight loss Credit reference to increased frequency/intensity of extreme weather events, such as tropical storms or droughts if coherently linked to evidence of climate change. Thorough coverage of one source of evidence for climate change can achieve full marks. **Example of well-developed ideas:** Ice cores are a reliable source of evidence of climate change. Ice cores are scientific and have number data as their evidence. By analysing the trapped air

			An answer at this level demonstrates **basic** understanding of evidence for climate change (AO2) with a **basic** analysis of the reliability of this evidence (AO3). This will be shown by including **simple** ideas about a source of evidence for climate change **and** its reliability. The information is basic and communicated in an unstructured way. The information is supported by limited evidence and the relationship to the evidence may not be clear. **0 marks** No response or no response worthy of credit		molecules in an ice core scientists can calculate the temperature of the atmosphere when the ice was formed. Using ice cores from Antarctica scientists have created graphs of temperature changes over the last 400,000 years. Tree rings are also reliable, scientific evidence. The width of the tree rings shows yearly growth of the tree and this can indicate if the climate was cooler or warmer. Historical records produced by people include paintings and diaries. These can show and indicate what the climate was like at the time, such as during the so called 'Little Ice Age' from 1300 to 1700. However they are personal accounts and lack objective accuracy. Scientific evidence is more reliable as it lacks bias and enables climate change evidence to be analysed over longer periods of time. **Example of developed ideas:** Ice cores are more reliable sources of evidence. They are scientific and have number data as their evidence. Using ice cores from Antarctica scientists have created graphs of temperature changes over the last 400,000 years. Historical records produced by people include paintings and diaries. They are personal accounts and could be biased. They only provide evidence for a shorter or fixed period of time. Scientific evidence is more reliable as it lacks bias and is more objective. **Examples of simple ideas:** Ice cores are used as evidence for climate change. They are more reliable than old paintings and diaries as the evidence is based on data not opinions.

Spelling, punctuation and grammar and the use of specialist terminology (SPaG) assessment grid*

High performance 3 marks
• 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
Intermediate performance 2 marks
• 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
Threshold performance 1 mark
• Learners spell and punctuate with reasonable accuracy • Learners use rules of grammar with some control of meaning and any errors do not significantly hinder overall • Learners use a limited range of specialist terms as appropriate
0 marks
• The learner's response does not relate to the question • The learner's achievement in SPaG does not reach the threshold performance level, for example errors in spelling, punctuation and grammar severely hinder meaning

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