

Cambridge Pre-U

GEOGRAPHY

9768/01

Paper 1 Global Environments

October/November 2020

MARK SCHEME

Maximum Mark: 50

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the October/November 2020 series for most Cambridge IGCSE, Cambridge International A and AS Level and Cambridge Pre-U components, and some Cambridge O Level components.

This syllabus is regulated for use in England, Wales and Northern Ireland as a Cambridge International Level 3 Pre-U Certificate.

This document consists of **17** printed pages.

Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently, e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

GENERIC MARKING PRINCIPLE 5:

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

GENERIC MARKING PRINCIPLE 6:

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

Guidance notes for marking 9768/01

Levels of response marking is used for the 6 mark and the 15 mark questions.

This Mark Scheme contains, on the following page, the **Generic Mark Scheme (GMS)** used for assessing all pieces of extended writing bearing 15 marks in the Cambridge Pre-U Geography, followed by **Indicative Content** for each question.

Whilst the GMS captures the essential generic qualities of responses in 5 mark bands (Levels), the Indicative Content is what it says: some indication of the probable content or possible approaches to, the questions and titles set. Candidates may develop their own approaches to questions. Examiners should not expect to find all the Indicative Content in any one response. Responses may be placed in any GMS Level without fulfilling all the descriptors for that mark band. Responses may exhibit characteristics of more than one Level and so examiners use the principle of best fit in determining response quality.

Cambridge expects Examiners to use their geographical judgement and professional experience, combined with guidance given by Senior Examiners at the Standardisation Meeting and during the standardisation process, in assessing responses appropriately

The Generic Mark Scheme (GMS)

Level	Marks	Assessment criteria
5	13–15	<ul style="list-style-type: none"> • Detailed and accurate knowledge and clear, high order understanding of the subject content • Relevant and accurate exemplification used effectively • Clear organisation; good English expression; accurate use of geographical terminology • Fully focused on the specific demands of the question • Thorough analysis and a critical approach to evaluation; appropriate application of concepts and theories • Conclusion is logical and well founded on evidence and argument
4	10–12	<ul style="list-style-type: none"> • Good knowledge and depth of understanding of the subject content • Appropriate and well-developed exemplification • Logical organisation; sound English expression; appropriate use of geographical terminology • Well focused on the demands of the question • Good analysis and evaluation; generally appropriate application of concepts and theories • Conclusion is sound and based on evidence and argument
3	7–9	<ul style="list-style-type: none"> • Sound knowledge and understanding of the subject content lacking depth in some areas • Appropriate but partial exemplification, may not be integrated with the argument • Generally clear communication but lacking some organisation; English expression and use of geographical terminology are mostly accurate • Sketch maps/diagrams generally used effectively and appropriately • Specific demands of the question mostly met • Some ability to analyse and evaluate; limited application of concepts and theories • Conclusion is limited and has some links to the rest of the response
2	4–6	<ul style="list-style-type: none"> • Some knowledge and understanding of the subject content lacking depth and detail • Exemplification used may be limited • Limited organisation; English expression is basic with some accurate use of geographical terminology • Sketch maps/diagrams may have inaccuracies and limited relevance • Question is addressed broadly or partially • Analysis, evaluation and application of concepts and theories are limited and may be superficial • Conclusion is basic and may not be linked to the rest of the response

Level	Marks	Assessment criteria
1	1–3	<ul style="list-style-type: none">• Little knowledge and understanding of the subject content• Exemplification, if used, is simple or may not be relevant• Lack of clarity and organisation; English expression is simple with inaccuracies; geographical terminology, if used, is basic or not understood• Question is understood weakly and may be addressed slightly• Superficial statements replace analysis and evaluation; application may be minimal or absent• Conclusion may be absent or simply asserted
0	0	<ul style="list-style-type: none">• No creditable response.

Section A

Hot Arid and Semi-Arid Environments

Question	Answer	Marks
1(a)(i)	<p>Fig. 1.1 shows the contribution of overgrazing and other human activities to soil degradation in hot arid and semi-arid environments in each global region.</p> <p>Using Fig. 1.1, compare the contribution made by overgrazing to soil degradation in each global region.</p> <p>Of the land that is degraded Australia has the greatest amount of overgrazed land. Asia and South America have the least amount of overgrazed land at around one third of the land which is degraded. Slightly above this is North America whereas Africa has just over half its degraded land caused by overgrazing. Europe lies just above Asia, and North and South America. Some reference to proportions and figures must be made for maximum marks.</p>	4
1(a)(ii)	<p>Explain how overgrazing is a significant factor in the process of soil degradation.</p> <p>Overgrazing denudes the vegetation cover leading to bare exposed soil which is dry and can be wind-blown or gullied in flash floods. Increasing rates of erosion cause reductions in soil organism diversity and quantity with fewer plants colonising. This creates a negative feedback, leading to unproductive land and degradation. Reduced ground cover enables compaction of the land by heavy flash flood rainfall, creating a negative feedback as plant roots cannot penetrate. This reduces the ability of plants to grow and water to penetrate, which harms soil microbes and results in serious erosion of the land.</p>	6

Question	Answer	Marks
1(b)(i)	<p>'The hydrological cycle and water balance in hot arid and semi-arid environments are influenced by rainfall and potential evapotranspiration.' To what extent is this statement true?</p> <p>Indicative content</p> <p>Explanation of potential evapotranspiration (PE) and the ratio to annual rainfall as related to water balance surpluses and deficits. This may include a diagram of a typical desert annual balance. The PE exceeds rainfall all year round except for spikes during flash floods when the ratio may be reversed. Surface runoff will be very high during flash floods and river channels carry large flows and loads. During dry periods, ground water supplies are usually low and there will be dry channels and valleys, wadis and ephemeral rivers, etc. There will be little interception as there is little vegetation. Stores and flows within the cycle are low apart from evaporation rates. Once the physical consequences are established, other factors such as human utilisation of water and changing land use, and tourism should be introduced to balance the discursive argument. There should be a good balance between knowledge of the water balance, hydrological cycle, natural processes and human intervention.</p> <p>15 mark questions are marked using the generic mark scheme for these questions.</p> <p>Higher order responses will demonstrate an understanding of the concepts of the hydrological cycle and the water balance as the foundation of the answer. Case study material or specific examples of the human uses and demands on available water will be included and refer to semi-arid areas. These might conclude by suggesting that climate change may exacerbate the imbalance in the system in the future.</p> <p>Lower order answers will have less grasp of physical principles and it is likely that whilst they discuss human factors the whole answer is unbalanced. There may be few examples or reference to arid environments at all.</p>	15

Question	Answer	Marks
1(b)(ii)	<p>Consider the extent to which wind produces landforms in hot arid and semi-arid environments.</p> <p>Indicative content</p> <p>Landforms in the syllabus include: dunes (all types), deflation hollows, ventifacts, rock pedestals, yardangs and zeugen. Expect a range to illustrate the power of the wind and the conditions needed for effective wind action.</p> <p>See generic mark scheme.</p> <p>Higher order responses will use a wide range of landforms to demonstrate their understanding of the influence of wind and may include diagrams to illustrate this. Such responses will also refer to past climates and other processes and suggest the importance of water eroded landforms from previous pluvials, which are now modified rather than formed by wind, to address the evaluative part of the answer.</p> <p>Lower order answers will cover some landforms the response will be descriptive rather than discursive contain a limited number and variety of forms the processes not well explained and little recognition of the past or present processes in relation to water.</p>	15

Glacial and Periglacial Environments

Question	Answer	Marks
2(a)(i)	<p>Fig. 2.1 is a photograph which shows part of the periglacial landscape of Northern Canada.</p> <p>Identify and briefly describe the landform labelled X on the photograph.</p> <p>X = Pingo (1 mark) Rounded, smooth sided, hill, some evidence of ramparts around a sunken summit. Sides slightly concavo-convex/straight. Vegetated in places. Some evidence of surface runoff. (max 3 marks)</p>	4

Question	Answer	Marks
2(a)(ii)	<p>Explain how the landform you have described in (a)(i) may have been formed.</p> <p>The photograph shows the Mackenzie Delta in Canada – a closed system – but an explanation of open system pingos is also acceptable.</p> <p>Closed system pingos: form on the sites of small lakes in flat low-lying areas where permafrost is more continuous. The lakes fill with sediments from meltwater, the surrounding permafrost advances and squeezes the unfrozen sediments (talik) below the lake. When the lake freezes, the decrease in temperature causes the ground water to freeze into an ice lens. An increase in hydrostatic pressure causes the underlying sediments to dome upward, creating the pingo. If the dome cracks the ice core may melt leading the pingo to collapse and a pond to form in the crater.</p> <p>Open system pingos: occur in valley bottoms and areas of thin discontinuous permafrost. When the surface (active) layer freezes, water is trapped in the talik (unfrozen layer). This water comes under pressure and moves towards the surface where, surrounded by permafrost, it freezes into an ice core causing the surface to dome upwards. As more water under pressure finds its way to the surface, the ice dome and pingo grow.</p>	6
2(b)(i)	<p>Discuss the extent to which abrasion is the most significant process in the formation of glacial troughs.</p> <p>Indicative content</p> <p>Glacial troughs contain an assemblage of landforms within a U-shaped valley. Any of these can be used to evaluate the role of abrasion which should be described at the outset together with other erosional processes. Possible landforms include: corries, arêtes, pyramidal peaks, truncated spurs, benches, rock basins and ribbon lakes, hanging valleys, roche moutonnées, crag and tail and striations. A careful selection will serve to illustrate a good argument.</p> <p>See generic mark scheme.</p> <p>Higher order responses will contain detailed knowledge of how the processes of erosion fit together with weathering and plucking as the tools for abrasion. Having clearly established these links, carefully selected landforms can be used to support the argument and may include diagrams to illustrate this.</p> <p>Lower order answers will have some of this information but may lack the links between the processes and not link those to the landforms clearly. The evaluation and conclusion will be limited.</p>	15

Question	Answer	Marks
2(b)(ii)	<p>To what extent is tourism the most significant threat to periglacial environments?</p> <p>Indicative content</p> <p>Outline the growth and location of tourist activities in periglacial landscapes. An examination of the impact of the activity and its threat to both physical and human environments is needed, e.g. relationship to permafrost wildlife, economic activity is needed. Other threats may or may not be deemed to outweigh the threat of tourism, for instance, climate change which may be human induced. An obvious way to develop the argument is by using a case study and/or detailed examples in specific locations.</p> <p>See generic mark scheme.</p> <p>Higher order responses will display an awareness of the interplay of human induced and physical threats to both physical and human environments, demonstrating an appreciation and understanding of the issues. The conclusion might suggest future scenarios.</p> <p>Lower order answers may describe each activity discreetly ignoring the interconnections. The coverage will not be as extensive as it might be in terms of both tourism and other factors.</p>	15

Coastal Environments

Question	Answer	Marks
3(a)(i)	<p>Fig. 3.1 shows a storm and swell beach profile.</p> <p>Describe the differences between the storm profile and the swell profile shown in Fig. 3.1.</p> <p>Storm profile: gentler, the berm is replaced as an offshore bar, no beach material.</p> <p>Swell profile: steeper, topped by a ridge known as a berm, beach material present.</p>	4
3(a)(ii)	<p>Explain why the two profiles shown in Fig. 3.1 are different.</p> <p>The swell profile results from waves which have a swash stronger than the backwash, so material is deposited on the beach and at the top of the beach where the high tide reaches. When storm waves arrive, their backwashes are the stronger force combing material down the beach which is deposited offshore as a ridge or bar.</p>	6

Question	Answer	Marks
3(b)(i)	<p>To what extent is the formation and development of a halosere the result of marine processes?</p> <p>Indicative content</p> <p>Responses may include salt marsh and mangroves as both are on the syllabus. Alternatively, responses may focus on one or other. There should be awareness of both formation and development of haloseres. The latter will include aspects not wholly related to marine processes but to plant colonisation and succession. The role of tides, tidal ranges and river currents and loads should also be considered. Deposition of material by the sea is the basis for the formation, and then ecological processes follow along with human intervention and management. Examples should help to identify and illustrate the points made together with diagrams.</p> <p>See generic mark scheme.</p> <p>Higher order responses provide comprehensive knowledge about both formation and development of haloseres. The physical principles will be strong but there will be discussion of other factors such as human intervention and management which may provide a balanced answer.</p> <p>Lower order answers will probably focus on the formation by marine processes and have some idea of development but be less detailed about the principles of plant succession.</p>	15
3(b)(ii)	<p>'The tertiary sector provides opportunities for, and constraints on, human activity in coastal environments.' To what extent is this statement valid?</p> <p>Indicative content</p> <p>This is a wide-ranging question allowing candidates to select from their knowledge of the tertiary sector. They should use some examples to illustrate both aspects of the question. The other sectors, primary and secondary, should be included in the evaluative section of the answer. For instance, a response might suggest that an example of resource exploitation could be dredging offshore to provide the material for beach replenishment, thus finding an opportunity rather than the negative in resource use. In fact, the coastline itself is a resource which is exploited by tourists for their enjoyment.</p> <p>See generic mark scheme.</p> <p>Higher order responses will cover a carefully selected number of examples which illustrate coverage of both negative and positive aspects of the tertiary sector as well as other sectors and are supported by strong case study material or exemplification.</p> <p>Lower order answers will lack detail and coverage of either or both the activities and the negative and positive aspects. Generally, these responses will not be supported by strong case study material or exemplification.</p>	15

Section B

Tropical Environments

Question	Answer	Marks
4(a)(i)	<p>Figs. 4.1 and 4.2 are photographs which show some adaptations of vegetation to the tropical rainforest environment.</p> <p>Using Figs. 4.1 and 4.2, identify and briefly describe <u>one</u> vegetation adaptation from each photograph.</p> <p>Fig. 4.1: lianas, buttress roots, broad leaved trees with bare boles.</p> <p>Fig. 4.2: drip tip leaves, broad leaves.</p>	4
4(a)(ii)	<p>Explain how each of the vegetation adaptations you have described in (a)(i) is a response to the characteristics of the tropical rainforest environment.</p> <p>Lianas root in the soil and use the tree for support as they grow towards the light in the dark conditions. Buttress roots grow to support tall trees at the base and to maximise nutrient take up from nutrient poor soils. Broad leaves maximise photosynthesis. Bare boles are canopy topped as the leaf area is maximising sunlight. Drip tip leaves allow abundant rainfall to drip off the leaf surface so transpiration can occur from the stomata on the leaf surface.</p>	6
4(b)(i)	<p>To what extent is plantation agriculture responsible for the increasing deforestation of tropical rain forests?</p> <p>Indicative content</p> <p>This question is directed at recent deforestation in Thailand and other areas of Southeast Asia where oil palm plantations have proved provocative and a threat. Answers that refer to rubber plantations and take a more historical approach are also creditworthy. Other human activities which can also threaten include: logging, construction, infrastructure, ranching, mining and tourism. The threat to wildlife and animal species may have an indirect effect by the loss of habitat.</p> <p>See generic mark scheme.</p> <p>Higher order responses will provide a wide ranging and detailed knowledge of the activities causing increased deforestation in tropical rain forests and draw on case studies and/or detailed examples in support, and consider the future prospects of these threatened environments.</p> <p>Lower order answers will be less comprehensive, include fewer threats and may be over-balanced towards the plantations. Conclusions will be basic and probably a summary of what has already been stated.</p>	15

Question	Answer	Marks
4(b)(ii)	<p>'Traditional lifestyles in tropical rainforest environments are increasingly under threat from a range of sources.' Discuss the validity of this statement.</p> <p>Indicative content</p> <p>The focus of this question is on lifestyles and the population of tropical rain forests and the threats to them. The threats are cultural, economic, social and political. The approach taken in responses will vary depending on the areas selected for discussion and how much of a threat the particular source is. The range of sources could be both within/outside a country and both regional and global, e.g. the Brazilian government have introduced management policies and sustainable tourist strategies with a view to maintaining the traditions of the remaining tribes, but house people on reservations so few are likely to be able to maintain the traditional hunter gathering means of survival.</p> <p>See generic mark scheme.</p> <p>Higher level responses will use detailed examples and/or case studies to illustrate a range of sources that threaten traditional rainforest lifestyles and provide an ongoing evaluation.</p> <p>Lower level answers will write about traditional lifestyles and then launch into tourism as a fail-safe approach without due consideration of a range of sources. Limited evaluation and a short concluding view is likely to be given.</p>	15

Temperate Environments

Question	Answer	Marks
5(a)(i)	<p>Fig. 5.1 shows the number of species and the rate of growth of vegetation during secondary succession in temperate deciduous woodland.</p> <p>Describe the trends in the number of species and the rate of growth of vegetation during the secondary succession shown in Fig. 5.1.</p> <p>Number of species: rapid increase to a peak of over 1200 species after 4 years. A steep decline becoming more gradual and a smaller peak after 50 years.</p> <p>Rate of growth: initially rapid for the first two years, a plateau for 12 years and then rapid increase between 20 and 50 years or for the next 30 years, and then plateau again.</p> <p>Figures may be quoted but descriptive terms, e.g. peaks, plateaus and troughs, steep, gentle, increase and decline best describe the trends over the time period. Both elements should be covered for the maximum mark.</p>	4

Question	Answer	Marks
5(a)(ii)	<p>Explain the reasons for the trends you have described in (a)(i).</p> <p>Secondary successions have more lower layers and species diversity as shrubs and low growing trees colonise. The explanation should be conceptual, i.e. ideas of colonisation (competing pioneer species on previously forested land), invasion and succession. Competition for light and space and the rise of 'dominants' (shading out lower plants with increased growth rates as numbers of species decrease) are also important. The relationships between the two elements may be considered.</p>	6
5(b)(i)	<p>To what extent can temperate deciduous woodlands be considered to be plagioclimax communities?</p> <p>Indicative content</p> <p>Awareness of the meaning of plagioclimax is crucial to this answer. Given extensive deforestation in the UK has led to little virgin primary deciduous woodland remaining. Examples of plagioclimax communities would include: Weald of Kent for charcoal and grasslands for pasture. Here the sheep grazing manages the ecosystem and are in equilibrium keeping the plant succession at bay. Coppicing and pollarding management strategies maintain the woodlands as sub climaxes.</p> <p>See generic mark scheme.</p> <p>Higher order responses describe a temperate deciduous woodland and engage with the concept of plagioclimax in relation to the woodlands of the UK and sub climaxes. An awareness of all the threats past and present to compromise these environments is demonstrated. Exemplification through detailed examples and/or case studies plus a thread of evaluation will be present throughout the answer.</p> <p>Lower level answers will be less clear about the conceptual aspects of the question. Such responses may appreciate some of the threats but not be able to include sufficient convincing case study material</p>	15

Question	Answer	Marks
5(b)(ii)	<p>Discuss the extent to which the exploitation of ‘the bread baskets of the world’ has resulted in environmental degradation.</p> <p>Indicative content</p> <p>Answers should clearly define the main terms that need to be addressed by the question; ‘bread baskets of the world’ applies to the prairies of the American mid-west and the steppes of Russia. Environmental degradation requires definition as the loss of soil, soil nutrients, vegetation and the processes by which this occurs. Physical processes must be an integral part of the answer. Exemplification using the 1930s ‘dust bowl’ in the American mid-west is the classic choice, but some answers may reference the steppes, chernozem soils, the influence of the Russian revolution and prior to that the moves to give more rights to the disenfranchised serfs before proceeding to modern day large-scale extensive and contract farming. Both give scope for a historical approach. Evaluation will take the form of consideration of factors beyond the economic to political, cultural and social.</p> <p>See generic mark scheme.</p> <p>Higher order responses will be able to use a detailed specific case study and evaluate using the other possible factors itemised above.</p> <p>Lower level answers may be brief as it is a specialised answer. Knowledgeable discussion and evaluation may be limited and lack sufficient exemplification.</p>	15

The Atmospheric Environment

Question	Answer	Marks
6(a)(i)	<p>Fig. 6.1 is a satellite image showing weather systems in the Earth’s atmosphere.</p> <p>Identify and briefly describe the weather systems at A and B shown on Fig. 6.1.</p> <p>A is a depression/low pressure system. B is an anticyclone/high pressure system.</p>	4
6(a)(ii)	<p>Explain how the general circulation of the atmosphere in the northern hemisphere has produced the pattern of weather systems you have described in <u>(a)(i)</u>.</p> <p>An explanation of the Tricellular model is required. Hot air rising at the equator kickstarts the Hadley cell. At 30°N it descends to form high pressure and no clouds or rain at A. Then the warm surface trade winds move out towards 60°N to meet cold arctic air from the north at the polar front. Different air temperatures create rising air, evaporation, condensation and cloud formation in a rotating cell of air which is the depression at B.</p>	6

Question	Answer	Marks
6(b)(i)	<p>To what extent is it possible to manage the impacts of an El Niño event at the global scale?</p> <p>Indicative content</p> <p>Locate and describe the circulation of winds in the Pacific Ocean. El Niño is a reversal of the Walker circulation. This wind reversal has implications for the Pacific Rim countries, i.e. Southeast Asia and further afield at a national scale in Australia as well as Peru. Global physical implications that should be considered include: jet stream patterns, climate change, freak and seasonable weather. Answers should then consider the management of El Niño events globally of problems such as forecasting, which is easier nationally because traditionally such events have had a regular pattern of eight-year cycles. Responses will recognise that the consequences now are less reliable and that increasing global temperatures may cause these changing patterns and may also be the result of them. The difficulties of global agreements and nationally within countries of managing freak events could also be discussed.</p> <p>See generic mark scheme.</p> <p>Higher order responses will be wide in scope and see many of the implications of the question, dealing well with the notion of scale. Evaluation may have an eye to the future.</p> <p>Lower level answers will not contain sufficient detail about the phenomenon and may struggle to discuss the issue of managing at this scale effectively or if they do the links will be uncertain. Evaluation will not be clear and may conclude with a simple statement that these events cannot be managed.</p>	15

Question	Answer	Marks
6(b)(ii)	<p>'The climate change lobby is unequivocal that (a) climate change is happening and (b) that the primary cause is human-induced.' To what extent do you agree with this statement?</p> <p>Indicative content</p> <p>Responses should define climate change and its possible causes, both physical and human, and may include a diagram of the enhanced greenhouse effect. Evidence is the other essential aspect to be addressed. Answers should provide some facts and figures from across the globe and the effects of rising atmospheric temperatures. There will be a necessary focus on the human causes of these rising temperatures such as: CO₂ levels, methane increases both animal and vegetable (via the release in areas of melting permafrost), SO₂, NOX and water vapour.</p> <p>See generic mark scheme.</p> <p>Higher order responses will include accurate physical geography and be clear about the gases and the ways in which and where human activity is increasing the gas levels. Evaluation should go beyond mere agreement with the climate lobby and be more equivocal about the future by suggesting that management and global summits and agreements may achieve a reduction and therefore enable a modification of the severity of the changes.</p> <p>Lower level answers will be less certain about the physical processes for example suggesting that it is the earth that is warming, and are unlikely to include a diagram of the enhanced greenhouse effect. Evaluative comment may be unequivocal in its agreement with the climate lobby ignoring the nuances of this question.</p>	15