

# **Markscheme**

**November 2016**

**MYP Interdisciplinary**

**On-screen examination**

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**Note: Before marking, please familiarize yourself with the pre-release material, all sources, the questions and the markscheme.**

**Disciplinary grounding task**

**Question 1a**

**Compare** the graphs generated by the three trials.

**(4 marks)**

Marks	Descriptor
0	The student does not achieve a standard described by any of the descriptors given below.
1–3	<p>Award <b>(1 mark)</b>, up to a maximum of <b>(3 marks)</b>, for any response from:</p> <ul style="list-style-type: none"> <li>• The graph for zero CO<sub>2</sub> /trial 1 indicates that plants will not grow</li> <li>• The graph for atmospheric CO<sub>2</sub> /trial 2 indicates that plants grow at a slow pace/rate.</li> <li>• The graph for above atmospheric CO<sub>2</sub> /trial 3 indicates that plants grow at a fast pace/rate.</li> <li>• The plants exposed to above atmospheric CO<sub>2</sub> / trial 3 levels of CO<sub>2</sub> grow taller.</li> </ul>
4	<p>The student includes three of the points below and makes the comparison to growth rates of atmospheric to above atmospheric CO<sub>2</sub> levels.</p> <ul style="list-style-type: none"> <li>• The graph for zero CO<sub>2</sub> / trial 1 indicates that plants will not grow.</li> <li>• The graph for atmospheric CO<sub>2</sub> / trial 2 indicates that plants grow at a slow pace/rate.</li> <li>• The graph for above atmospheric CO<sub>2</sub> /trial 3 indicates that plants grow at a fast pace/rate.</li> <li>• The plants exposed to above atmospheric levels of CO<sub>2</sub> / trial 3 grow taller.</li> </ul> <p>Therefore plants exposed to above atmospheric CO<sub>2</sub> levels grow faster than plants exposed to atmospheric level of CO<sub>2</sub> (this comment maybe implicit in their wording of the 2<sup>nd</sup> and 3<sup>rd</sup> bullet).</p>

### Question 1b

**Evaluate** the experimental method used in this experiment.

In your answer you should:

- identify strengths and limitations in the experimental method
- suggest improvements.

**(8 marks)**

**Note: To achieve more than (4 marks) both strengths and limitations need to be included in the answer.**

**Note: To achieve more than (4 marks) suggestions for improvement must be given.**

Marks	Descriptor
0	The student does not achieve a standard described by any of the descriptors given below.
1–2	<p>The answer is <b>limited</b></p> <p>The student identifies one from:</p> <ul style="list-style-type: none"> <li>• Limited information provided by the researcher on control variables e.g. temperature, watering, soil type</li> <li>• Some control variables are given</li> <li>• An issue with the number of trials e.g. should use more than 10 plants.</li> <li>• The independent and dependent variables are not stated clearly</li> <li>• Any appropriate strength or limitation with the details provided in the method.</li> <li>• The researcher did not specify a hypothesis.</li> <li>• Lack of numerical value for CO<sub>2</sub></li> <li>• Position of the light source relative to the pots</li> </ul>

3–4	<p>The description is <b>adequate</b></p> <p>The student identifies two issues from:</p> <ul style="list-style-type: none"> <li>• Limited information provided by the researcher on control variables e.g. temperature, watering, soil type</li> <li>• Some control variables are given</li> <li>• An issue with the number of trials e.g. should use more than 10 plants.</li> <li>• The independent and dependent variables are not stated clearly</li> <li>• Any appropriate strength or limitation with the details provided in the method.</li> <li>• The researcher did not specify a hypothesis.</li> <li>• Lack of numerical value for CO<sub>2</sub></li> <li>• Position of the light source relative to the pots</li> </ul> <p>The student suggests one improvement.</p>
5–6	<p>The explanation is <b>clear</b></p> <p>The student identifies three issues from:</p> <ul style="list-style-type: none"> <li>• Limited information provided by the researcher on control variables e.g. temperature, watering, soil type</li> <li>• Some control variables are given</li> <li>• An issue with the number of trials e.g. should use more than 10 plants.</li> <li>• The independent and dependent variables are not stated clearly</li> <li>• Any appropriate strength or limitation with the details provided in the method.</li> <li>• The researcher did not specify a hypothesis.</li> <li>• Lack of numerical value for CO<sub>2</sub></li> </ul> <p>The student suggests two improvements.</p>
7–8	<p>The evaluation is <b>thorough</b></p> <p>The student identifies four issues from:</p> <ul style="list-style-type: none"> <li>• Limited information provided by the researcher on control variables e.g. temperature, watering, soil type</li> <li>• Some control variables are given</li> <li>• An issue with the number of trials e.g. should use more than 10 plants.</li> <li>• The independent and dependent variables not stated clearly</li> <li>• Any appropriate strength or limitation with the details provided in the method.</li> <li>• The researcher did not specify a hypothesis.</li> <li>• Lack of numerical value for CO<sub>2</sub></li> </ul> <p>The student suggests two improvements.</p>

**Question 1c**

**Suggest** two changes to the investigation above that would make it suitable for a conscientious scientist interested in the impact of climate change on animal life.

**(2 marks)**

Marks	Descriptor
2	<p>Award <b>(1 mark)</b> up to a maximum of <b>(2 marks)</b> for any response from:</p> <ul style="list-style-type: none"> <li>• You should not use the zero CO<sub>2</sub> or O<sub>2</sub> part of the experiment.</li> <li>• You should ensure the wellbeing of the animal is carefully monitored.</li> <li>• You should ensure there is sufficient water for the animal.</li> <li>• You should ensure there is sufficient food for the animal.</li> <li>• You should ensure there is sufficient space for the animal.</li> <li>• You should ensure the temperature is appropriate.</li> </ul>

### Question 2a

With reference to **Sources 3, 5 and 6** provided in the tabs below, select **two** different stakeholders and **outline** their different perspectives about fishing and the implications of overfishing. An example has been provided from a marine biologist. Implications could be taken from economic, social, political, environmental, ethical, legal or technological factors.

**(4 marks)**

**Note:** The answers given below are sample answers worth (1 mark) each, other sensible perspectives and implications are acceptable providing they link to the stakeholder.

Stakeholder	Perspective	Implications of over fishing
<b>Example: Marine biologist</b>	Scientific data can be collected about fishing	Scientists will have to advise policy makers
<b>Consumer</b>	Fish is an essential source of protein Popular food	As species decline the price of fish will increase
<b>Fisher</b>	Fishing is essential to my livelihood	The population of fish will drop and I will have no income or job
<b>Corporate fishing company</b>	We have efficient methods that allow us to catch many fish at a time	They will have less efficiency and smaller catches
<b>Environmentalist</b>	We must ensure we protect marine environments	The marine environment will be changed forever/ Destruction of habitats
<b>Policy maker</b>	There should be regulations that are followed in national and international waters	More legislation and fines for illegal fishing

## Question 2b

**Analyse** the impact of fishing on the sustainability of marine life. With reference to the sources provided in the tabs, use the analysis table below to provide relevant information and reach a conclusion based on your analysis.

In your answer you should:

- consider a strength and weakness of fishing in terms of sustainability
- mention an opportunity for sustainability of marine life
- mention a threat that may affect the sustainability of marine life
- give a conclusion.

**(12 marks)**

Marks	Descriptor
0	The student does not achieve a standard described by any of the descriptors given below.
1–2	<p>No examples or quotations are used</p> <p>The analysis is <b>brief and limited</b>.</p> <p>The student writes a simple analysis that identifies one from:</p> <ul style="list-style-type: none"> <li>• consider the strengths of the sustainability of fishing methods</li> <li>• consider the weaknesses of the sustainability of fishing methods</li> <li>• take into account opportunities for sustainability of marine life</li> <li>• mention threats that make affect the sustainability of marine life.</li> </ul> <p>The conclusions are limited.</p>
3–5	<p>Using at least one example/quotation</p> <p>The answer is <b>adequate</b>.</p> <p>The student writes an analysis with reason or evidence to explain a connection with two from:</p> <ul style="list-style-type: none"> <li>• consider the strengths of the sustainability of fishing methods</li> <li>• consider the weaknesses of the sustainability of fishing methods</li> <li>• take into account opportunities for sustainability of marine life</li> <li>• mention threats that make affect the sustainability of marine life.</li> </ul> <p>The conclusions are adequate.</p>

6–8	<p>Using two examples/quotations</p> <p>The answer is <b>detailed and balanced</b>.</p> <p>The student writes an analysis with valid reasons and evidence to explain a connection with three from:</p> <ul style="list-style-type: none"> <li>• consider the strengths of the sustainability of fishing methods</li> <li>• consider the weaknesses of the sustainability of fishing methods</li> <li>• take into account opportunities for sustainability of marine life</li> <li>• mention threats that make affect the sustainability of marine life.</li> </ul> <p>The conclusions are detailed and balanced.</p>
9–12	<p>Using at least three examples/quotations</p> <p>The answer is thorough <b>and perceptive</b>.</p> <p>The student writes an effective analysis with valid well supported reasons and evidence to explain a connection with all from:</p> <ul style="list-style-type: none"> <li>• consider the strengths of the sustainability of fishing methods</li> <li>• consider the weaknesses of the sustainability of fishing methods</li> <li>• take into account opportunities for sustainability of marine life</li> <li>• mention threats that make affect the sustainability of marine life.</li> </ul> <p>The conclusions are thorough and perceptive.</p>

### Question 3a

Using **Sources 3, 5 and 7** provided in the tabs above, write an academic response to Dr Shukei Masuma’s statement in which you **evaluate** the potential impact of farmed bluefin tuna on sustainability. In your response you should:

- identify relevant ways in which science is applied and used for fishing
- identify relevant ways in which individual and collective interests impact fishing
- identify relevant interactions and interdependence between individuals, societies and the environment
- consider the implications of scientific innovation on sustainability of the ecosystem.

**(15 marks)**

**Note:** Dr Shukei Masuma’s statement reads – ‘Looking ahead, there’s really no need to differentiate between wild Bluefin tuna and farmed stocks. It’s about co-existing, and Bluefin tuna is but one example. That’s the beauty of aquaculture – we can continuously look into new ways to improve on the production of Bluefin tuna.’

**Note:** Responses that make implicit references to the sources are acceptable as examples. (Types of fishing, fish farming, sustainability)

Marks	Descriptor
0	The student does not achieve a standard described by any of the descriptors given below.
1–3	<p>The creation is <b>brief and limited</b>.</p> <p>The student’s response addresses in a statement up to two of the four points:</p> <ul style="list-style-type: none"> <li>• identify relevant ways in which science is applied and used for fishing</li> <li>• identify relevant ways in which individual and collective interests impact fishing</li> <li>• identify relevant interactions and interdependence between individuals, societies and the environment</li> <li>• consider the implications of scientific innovation on sustainability of the ecosystem.</li> </ul> <p>Contains no examples from the sources provided</p> <p>Within this markband, answers that communicate the ideas clearly and coherently will score higher.</p>

4–7	<p>The creation is <b>adequate and clear</b>.</p> <p>The student's response addresses in a description up to three of the following points:</p> <ul style="list-style-type: none"> <li>• identify relevant ways in which science is applied and used for fishing</li> <li>• identify relevant ways in which individual and collective interests impact fishing</li> <li>• identify relevant interactions and interdependence between individuals, societies and the environment</li> <li>• consider the implications of scientific innovation on sustainability of the ecosystem.</li> </ul> <p>Contains one examples from the sources provided</p> <p>Within this markband, answers that communicate the ideas clearly and coherently will score higher.</p>
8–11	<p>The creation is <b>detailed and balanced</b>.</p> <p>The student's response addresses in an explanation up to four of the following points:</p> <ul style="list-style-type: none"> <li>• identify relevant ways in which science is applied and used for fishing</li> <li>• identify relevant ways in which individual and collective interests impact fishing</li> <li>• identify relevant interactions and interdependence between individuals, societies and the environment</li> <li>• consider the implications of scientific innovation on sustainability of the ecosystem.</li> </ul> <p>Contains two examples from the sources provided</p> <p>Within this markband, answers that communicate the ideas clearly and coherently will score higher.</p>
12-15	<p>The creation is <b>thorough and perceptive</b>.</p> <p>The student's response addresses in an evaluation all of the following points:</p> <ul style="list-style-type: none"> <li>• identify relevant ways in which science is applied and used for fishing</li> <li>• identify relevant ways in which individual and collective interests impact fishing</li> <li>• identify relevant interactions and interdependence between individuals, societies and the environment</li> <li>• consider the implications of scientific innovation on sustainability of the ecosystem.</li> </ul> <p>For the response to be evaluative strengths, weakness and an evaluative conclusion need to be drawn.</p> <p>Contains three examples from the sources provided, the most perceptive answers will use information from beyond the source.</p> <p>Within this markband, answers that communicate the ideas clearly and coherently will score higher.</p>

**Question 3b**

**Explain** how you have synthesized your knowledge of both the sciences and individuals and societies in your academic response in part (a) and how this has contributed to your interdisciplinary understanding of the key concept of **systems**.

**(10 marks)**

**Note: A maximum of (5 marks) can be given if only one of the disciplines from science and individuals and society has been mentioned.**

Marks	Descriptor
0	The student does not achieve a standard described by any of the descriptors given below.
1–2	<p>The description is <b>brief and limited</b>.</p> <p>The student writes a brief statement about their academic response or the key concept of systems</p> <p>Within this markband, answers that communicate the ideas clearly and/or coherently will score higher.</p>
3–5	<p>The description is <b>adequate</b>.</p> <p>The student writes some statements about how they used science and/or individuals and societies in their academic response and about the connections to the key concept of systems</p> <p>Within this markband, answers that communicate the ideas clearly and/or coherently will score higher.</p>
6–7	<p>The explanation is <b>detailed and balanced</b>.</p> <p>The student describes how they used science and individuals and societies in their academic response.</p> <p>Describes how this has contributed to their interdisciplinary understanding of the key concept “systems”.</p> <p>There is a balanced consideration of both disciplines.</p> <p>Within this markband, answers that communicate the ideas clearly and coherently will score higher.</p>

8–10	<p>The explanation is thorough <b>and perceptive</b>.</p> <p>The student:</p> <p>Explains how they used science and individuals and societies in their academic response</p> <p>Explains how this has contributed to their interdisciplinary understanding of the key concept “systems”.</p> <p>There is a balanced consideration of both disciplines and the response is perceptive, addressing its contribution to the understanding of the key concept of systems.</p> <p>Within this markband, answers that communicate the ideas clearly and coherently will score higher.</p>
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**Question 4a**

Referring to the information in the video, **identify four** examples that demonstrate disciplinary knowledge, two from sciences and two from individuals and societies. The video transcript is available to support your answer.

**(4 marks)**

**Note: It is (1 mark) for each response and a maximum of (2 marks) for each individual discipline.**

Responses **may** include:

Discipline	Disciplinary knowledge
<b>Science</b>	where the outputs of one system are the inputs of another/closed systems
	energy positive homes, renewable energy, energy storage, door-step high-yield organic food production, vertical farming aquaponics, water management, no nitrogen and phosphorous waste and waste-to-resource systems.
	already existing technologies are simply being applied to provide clean energy, water and food
	reducing the global CO <sub>2</sub> emission
<b>Individuals and societies</b>	resilient eco-villages that can power and feed self-reliant families
	social value, environmental protection, by creating a framework for empowering families and developing a sense of community, where people become part of a shared local eco-system: reconnecting people with nature and consumption with production.
	changing some of the challenges of a growing population, increasing urbanization, scarcity of resources, the growing global food crisis
	reducing the burdens on municipal and national governments in dynamically changing planetary and economic times.

**Question 4b**

To **what extent** does the video synthesize knowledge of **both** scientific understanding and individuals and societies to inform the viewer about sustainable living?

**(16 marks)**

Marks	Descriptor
0	The student does not achieve a standard described by any of the descriptors given below.
1–4	<p>The answer is <b>basic</b>.</p> <p>The student <b>states</b> that the video includes knowledge of science and/or individuals and societies, however the argumentation is limited.</p> <p>Within this markband, answers that communicate the ideas clearly and coherently will score higher.</p>
5–8	<p>The answer is <b>adequate</b>.</p> <p>The student <b>explains</b> that the video synthesizes knowledge of science and individuals and societies by either explaining benefits <b>or</b> weaknesses of the video's synthesis and providing evidence from the source.</p> <p>Within this markband, answers that communicate the ideas clearly and coherently will score higher.</p>
9–12	<p>The answer is <b>detailed</b>.</p> <p>The student <b>starts evaluating</b> the fact that the video synthesizes knowledge of science and individuals and societies. The student does this by including <b>three</b> of the following:</p> <ul style="list-style-type: none"> <li>• benefits of the synthesis</li> <li>• limitations of the synthesis</li> <li>• evidence from the source</li> <li>• drawing an evaluative conclusion.</li> </ul> <p>Within this markband, answers that communicate the ideas clearly and coherently will score higher.</p>

13-16	<p>The answer is <b>thorough</b>.</p> <p>The student <b>evaluates</b> the extent to which the synthesis between knowledge of science and individuals and societies is balanced. The student does this by including <b>all</b> of the following:</p> <ul style="list-style-type: none"><li>• benefits of the synthesis</li><li>• limitations of the synthesis</li><li>• evidence from the source</li><li>• drawing an evaluative conclusion.</li></ul> <p>In the most perceptive answers students may comment on how the video could be improved. Within this markband, answers that communicate the ideas clearly and coherently will score higher.</p>
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### Question 5

Imagine you are a resident of the new ReGen community and you have been invited to join the community council. The council wants to provide a set of social guidelines for members of the community to follow. Your task is to **outline** the social guidelines.

**The audience and purpose of the guidelines are:**

**Audience:** new members of the ReGen community

**Purpose:** organize life within the community through establishing guiding principles, as well as what is considered as social behaviours that will have negative consequences on the community.

Your social guidelines should:

- include relevant scientific factors that will maintain a healthy balance of the community ecosystem
- include positive social behaviour that will ensure the healthy balance of the community ecosystem
- include social behaviours that may have negative consequences in the healthy balance of the community ecosystem
- synthesize your knowledge in sciences and individuals and societies to demonstrate environmental and human systems interconnectedness
- communicate considering the format, audience and purpose.

**(15 marks)**

**Note: To receive (8 marks) and above, the context of the script for the social guidelines must be followed.**

Marks	Descriptor
0	The student does not achieve a standard described by any of the descriptors given below.
1–3	<p>The description is <b>brief</b> and <b>limited</b>.</p> <p>The student creates social guidelines with <b>brief</b> details.</p> <p>Connections to disciplines and sources are limited.</p> <p>Within this markband, answers that communicate the ideas clearly and coherently will score higher.</p>

4–7	<p>The description is <b>adequate</b> and <b>clear</b>.</p> <p>The student creates social guidelines with two from:</p> <ul style="list-style-type: none"> <li>• include relevant scientific factors that will maintain a healthy balance of the community ecosystem</li> <li>• include positive social behaviour that will ensure the healthy balance of the community eco system</li> <li>• include social behaviour that may have negative consequences in the healthy balance of the community eco system</li> <li>• synthesize your knowledge in sciences and individuals and societies to demonstrate environmental and human systems interconnectedness.</li> </ul> <p>Connections between disciplines are clear and sources have been touched upon.</p> <p>Within this markband, answers that communicate the ideas clearly and coherently will score higher.</p>
8–11	<p>The description is <b>detailed</b> and <b>balanced</b>.</p> <p>The student creates social guidelines with three from:</p> <ul style="list-style-type: none"> <li>• include relevant scientific factors that will maintain a healthy balance of the community ecosystem</li> <li>• include positive social behaviour that will ensure the healthy balance of the community eco system</li> <li>• include social behaviour that may have negative consequences in the healthy balance of the community eco system</li> <li>• synthesize your knowledge in sciences and individuals and societies to demonstrate environmental and human systems interconnectedness.</li> </ul> <p>Connections between disciplines are balanced and both sources 8 and 9 are clearly considered.</p> <p>Within this markband, answers that communicate the ideas clearly and coherently, considering format, audience and purpose will score higher.</p>
12–15	<p>The description is <b>thorough</b> and <b>perceptive</b>.</p> <p>The student creates social guidelines with a <b>thorough</b> and <b>perceptive</b> scientific appraisal with <b>all</b> of the elements from:</p> <ul style="list-style-type: none"> <li>• include relevant scientific factors that will maintain a healthy balance of the community ecosystem</li> <li>• include positive social behaviour that will ensure the healthy balance of the community eco system</li> <li>• include social behaviour that may have negative consequences in the healthy balance of the community eco system</li> <li>• synthesize your knowledge in sciences and individuals and societies to demonstrate environmental and human systems interconnectedness.</li> </ul> <p>Connections between disciplines are perceptive with sources and understanding from beyond sources 8 and 9 being used.</p> <p>Within this markband, answers that communicate the ideas clearly and coherently, considering format, audience and purpose will score higher.</p>

## Reflective journal

### Question 6

Using the features of sustainability in **Source 4**, **evaluate** how sciences and individuals and societies help us to better understand the concept of sustainability. In your answer, you should consider the following:

- the benefits of sciences and individuals and societies in understanding the concept of sustainability
- the limitations of sciences and individuals and societies in understanding the concept of sustainability
- the shared interdisciplinary understanding of the concept of sustainability
- each of the features of sustainability from **Source 4**.

**(16 marks)**

Marks	Descriptor
0	The student does not achieve a standard described by any of the descriptors given below.
1–4	<p>The answer is <b>limited</b>.</p> <p>The student <b>describes superficially</b> the limitations <b>or</b> benefits of disciplinary <b>or</b> interdisciplinary knowledge in the understanding of the features of sustainability.</p> <p>For top marks in this band, students either need to:</p> <ul style="list-style-type: none"> <li>• describe benefits <b>or</b> limitations of two out of: science, individuals and societies, interdisciplinary</li> <li><b>Or</b></li> <li>• describe the benefits and limitations of the science only</li> <li><b>Or</b></li> <li>• describe the benefits and limitations of the discipline of individuals and societies</li> <li><b>Or</b></li> <li>• describe the benefits and limitations of the using both disciplines in an interdisciplinary manner.</li> </ul> <p>At the top end of the band connects to at least 1 feature of sustainability</p>

5–8	<p>The answer is <b>adequate</b>.</p> <p>The student <b>describes</b> some benefits <b>and/or</b> limitations of disciplinary <b>and/or</b> interdisciplinary knowledge in the understanding of the features of sustainability.</p> <p>For top marks in this band, students either need to:</p> <ul style="list-style-type: none"> <li>• describe benefits <b>and</b> limitations of two out of three: science, individuals and societies, interdisciplinary</li> <li><b>Or</b></li> <li>• describe benefits <b>or</b> limitations of all three.</li> </ul> <p>At the top end of the band connects to at least 2 features of sustainability</p>
9–12	<p>The answer is <b>detailed</b>.</p> <p>The student <b>explains</b> the benefits <b>and</b> limitations of <b>both</b> disciplinary <b>and</b> interdisciplinary knowledge in the understanding of the features of sustainability.</p> <p>For top marks in this band the student must have benefits and limitations for at least two of the following points and either benefits or limitations for the remaining point:</p> <ul style="list-style-type: none"> <li>• Student explains the benefits and limitations of science.</li> <li>• Student explains the benefits and limitations of individuals and societies.</li> <li>• Student explains the benefits and limitations using both disciplines in an interdisciplinary manner.</li> </ul> <p>At the top end of the band connects to at least 3 features of sustainability</p>
13–16	<p>The answer is <b>thorough</b>.</p> <p>The student <b>evaluates thoroughly</b>, the benefits <b>and</b> limitations of <b>both</b> disciplinary <b>and</b> interdisciplinary knowledge in the understanding of the features of sustainability.</p> <p>Top marks will be awarded if:</p> <ul style="list-style-type: none"> <li>• Student evaluates the benefits and limitations of science.</li> <li>• Student evaluates the benefits and limitations of individuals and societies.</li> <li>• Student evaluates the benefits and limitations using both disciplines in an interdisciplinary manner.</li> </ul> <p>At the top end of the band connects to all 4 features of sustainability</p>

### Question 7

**Discuss** how another subject group, **excluding** sciences and individuals and societies, could help people understand the importance of sustainability.

In your answer, reflect on the development of your own interdisciplinary understanding by:

- referring to at least one source provided in this examination
- considering perspectives, arguments and/or evidence related to sustainability
- referring to questions from the examination
- referring to discussions from your classroom preparation.

**(14 marks)**

**Note: Just mentioning any of the points is not good enough.**

**Note: In terms of interdisciplinary understanding other disciplines mentioned other than the subject groups are acceptable.**

**Note: All points need to be clearly addressed to count towards the markscheme.**

**Note: Implicit reference / comments from a source or question is acceptable. However where there is a crossover between question and a source only count this once e.g. fishing**

Marks	Descriptor
0	The student does not achieve a standard described by any of the descriptors given below.
1–3	<p>The student demonstrates <b>limited</b> reflection on his or her development of interdisciplinary understanding.</p> <p>For top marks in this band, <b>at least one of the points</b> below must be addressed and specifically directed to their development of interdisciplinary understanding.</p> <ul style="list-style-type: none"> <li>• referring to at least one source provided in this examination</li> <li>• considering perspectives/arguments/evidence related to sustainability</li> <li>• referring to questions from the examination</li> <li>• referring to discussions from your classroom preparation.</li> </ul>
4–7	<p>The student demonstrates <b>adequate</b> reflection on his or her development of interdisciplinary understanding.</p> <p>For top marks in this band, <b>at least two of the points</b> below must be addressed and specifically directed to their development of interdisciplinary understanding.</p> <ul style="list-style-type: none"> <li>• referring to at least one source provided in this examination</li> <li>• considering perspectives/arguments/evidence related to sustainability</li> <li>• referring to questions from the examination</li> <li>• referring to discussions from your classroom preparation.</li> </ul>

8–11	<p>The student demonstrates <b>significant</b> reflection on his or her development of interdisciplinary understanding.</p> <p>For top marks in this band, <b>at least three of the points</b> below must be addressed in a significant manner and specifically directed to their development of interdisciplinary understanding.</p> <ul style="list-style-type: none"><li>• referring to at least one source provided in this examination</li><li>• considering perspectives/arguments/evidence related to sustainability</li><li>• referring to questions from the examination</li><li>• referring to discussions from your classroom preparation.</li></ul>
12–14	<p>The student demonstrates <b>thorough</b> and <b>nuanced</b> reflection on his or her development of interdisciplinary understanding.</p> <p>For top marks in this band, <b>all of the points</b> below must be addressed in a thorough and nuanced manner.</p> <ul style="list-style-type: none"><li>• referring to at least one source provided in this examination</li><li>• considering perspectives/arguments/evidence related to sustainability</li><li>• referring to questions from the examination</li><li>• referring to discussions from your classroom preparation.</li></ul>