# Sample Assessment Task Year 11 Biology

## Sample for implementation for Year 11 from 2018

### Context

Students have been studying adaptations with reference to Charles Darwin’s work in the Galapagos Islands. Students are asked to design a tour around the Galapagos for biology enthusiasts who are interested in exploring different islands with a variety of organisms that show different adaptations to their environments.

| Task number: 2 | Weighting: 30% | Timing: Term 3, Week 4 |
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| Outcomes assessed* selects and processes appropriate qualitative and quantitative data and information using a range of appropriate media BIO11/12-4
* analyses and evaluates primary and secondary data and information BIO11/12-5
* solves scientific problems using primary and secondary data, critical thinking skills and scientific processes BIO11/12-6
* communicates scientific understanding using suitable language and terminology for a specific audience or purpose BIO11/12-7
* describes biological diversity by explaining the relationships between a range of organisms in terms of specialisation for selected habitats and evolution of species BIO11-10
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| Nature of the taskCreate and present an educational tour through the Galapagos Islands suitable for people interested in the evolutionary development of species living in the Galapagos. The tour information, presented in a brochure:* describes the route taken – visiting 5 islands in the group
* justifies the choice of those 5 islands
* includes a range of different organisms that will be studied, explaining:
* adaptations of the organisms
* evolutionary changes in the organisms
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| Marking criteria:Knowledge and understanding – 10 marks**BIO11-10** **describes biological diversity by explaining the relationships between a range of organisms in terms of specialisation for selected habitats and evolution of species**Students:* describe a range of adaptations shown by organisms
* justify the choice of structures as adaptations
* explain the evolutionary changes that have occurred in specific organisms

Process and analyse data – 10 marks**BIO11/12-4** **selects and processes appropriate qualitative and quantitative data and information using a range of appropriate media**Students**:*** select qualitative and quantitative data and information and represent them using a range of formats, digital technologies and appropriate media
* apply quantitative processes where appropriate
* evaluate and improve the quality of data

**BIO11/12-5 analyses and evaluates primary and secondary data and information**Students:* derive trends, patterns and relationships in data and information
* assess error, uncertainty and limitations in data
* assess the relevance, accuracy, validity and reliability of primary and secondary data and suggest improvements to investigations

Problem solving and Communicating – 15 marks**BIO11/12-6** **solves scientific problems using primary and secondary data, critical thinking skills and scientific processes**Students:* use modelling (including mathematical examples) to explain phenomena, make predictions and solve problems using evidence from primary and secondary sources
* use scientific evidence and critical thinking skills to solve problems

**BIO11/12-7** **communicates scientific understanding using suitable language and terminology for a specific audience or purpose**Students:* select and use suitable forms of digital, visual, written and/or oral forms of communication
* select and apply appropriate scientific notations, nomenclature and scientific language to communicate in a variety of contexts
* construct evidence-based arguments and engage in peer feedback to evaluate an argument or conclusion
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| Feedback provided To inform future learning your feedback will consist of: * an annotated marking guidelines sheet
* annotations on your submitted work
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### Marking Guidelines

| Outcome | Developing | Elementary | Substantial | High |
| --- | --- | --- | --- | --- |
| **BIO11-10 Describes biological diversity by explaining the relationships between a range of organisms in terms of specialisation for selected habitats and evolution of species****Maximum marks 10** | * identifies a characteristic of organisms as an adaptation

**Marks 1–3** | * identifies a few characteristics of organisms as adaptations
* explains why a structure is considered an adaptation
* describes evolutionary change

**Marks 4–5** | * describes three or four characteristics of organisms as adaptations
* explains why each of these structures is considered an adaptation
* explains evolutionary change in relation to at least one of the chosen organisms

**Marks 6–8** | * describes five different characteristics of organisms as adaptations
* justifies why each of these structures is considered an adaptation
* explains evolutionary change that have occurred in these chosen organisms

**Marks 9–10** |
| **BIO11/12-4 Selects and processes appropriate qualitative and quantitative data and information using a range of appropriate media****Maximum marks 5** | * data is disorganised and limited resources have been accessed

**Marks 1** | * selects qualitative or quantitative data and information and represents them using a limited range of formats, digital technologies and appropriate media
* describes the usefulness of the data

**Marks 2** | * selects qualitative and quantitative data and information and represents them using a range of formats, digital technologies and appropriate media
* applies some quantitative processes
* evaluates the quality of the data

 **Marks 3** | * selects qualitative and quantitative data and information and represents them using an effective range of formats, digital technologies and appropriate media
* applies quantitative processes where appropriate
* evaluates and suggests ways to improve the quality of data

**Marks 4–5** |
| **BIO11/12-5 Analyses and evaluates primary and secondary data and information****Maximum marks 5** | * presents data with limited analysis

**Marks 1** | * states trends, patterns and relationships in data and information with limited analysis
* restates information, rather than analyses it

**Marks 2** | * derives trends, patterns and relationships in information
* describes where error, uncertainty and limitations in data may occur

**Marks 3** | * derives trends, patterns and relationships in information
* assesses error, uncertainty and limitations in data
* assesses the relevance, accuracy, validity and reliability of primary and secondary data and suggests improvements to investigations

**Marks 4–5** |

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| --- | --- | --- | --- | --- |
| Outcome | Developing | Elementary | Substantial | High |
| **BIO11/12-6** **solves scientific problems using primary and secondary data, critical thinking skills and scientific processes****Maximum marks 5** | * the conclusion is incomplete and does not address the question/problem to be solved

**Marks 1** | * the conclusion demonstrates a weak understanding of the science concept as evidenced by:
* no use of scientific vocabulary, connections between data, observations and new concepts are not supported by evidence

 **Marks 2** | * the conclusion demonstrates an understanding of the science concept being investigated as evidenced by:
* appropriate use of new scientific vocabulary,
* connections between data, observations and concepts supported by specific evidence

 **Marks 3** | * the conclusion demonstrates a clear understanding of the science concept being investigated as evidenced by:
* extensive use scientific vocabulary
* clear connections between data, observations and concepts are consistently supported by specific evidence

**Marks 4–5** |
| **BIO11/12-7 Communicates scientific understanding using suitable language and terminology for a specific audience or purpose****Maximum marks 10** | * does not clearly define subject and purpose
* little understanding of information
* gives insufficient support for ideas or conclusions
* uses little, if any, biological information

**Marks 1–2** | * attempts to define purpose and subject
* provides basic information
* refers to evidence supporting ideas and conclusions
* uses some biological information

**Marks 3–5** | * provides clear purpose and subject
* ideas and conclusions are supported by evidence
* selects and applies appropriate scientific notations, nomenclature and scientific language to communicate
* demonstrates thorough knowledge by explaining biological concepts

**Marks 6–8** | * provides a comprehensive consideration of the purpose and subject
* ideas and conclusions are extensively supported by evidence
* selects and applies appropriate scientific notations, nomenclature and scientific language to communicate in a variety of contexts
* demonstrates extensive knowledge by explaining biological concepts

**Marks 9–10** |