VCE Applied Computing: Data Analytics: Administrative information for School-based Assessment in 2021/2022 NHT

School-assessed Task

The School-assessed Task (SAT) contributes 30 per cent to the study score.

Teachers will provide to the Victorian Curriculum and Assessment Authority (VCAA) a score against each criterion that represents an assessment of the student’s level of performance for Unit 3 Outcome 2 and   
Unit 4 Outcome 1. The recorded scores must be based on the teacher’s assessment of the student’s performance according to the criteria on pages 6–15. This assessment is subject to the VCAA’s statistical moderation process.

The 2021/2022 NHT VCE Applied Computing: Data Analytics assessment sheet on page 19 is to be used by teachers to record the SAT score. The completed assessment sheet for each student’s SAT must be available on request by the VCAA.

The mandated assessment criteria are published annually on the [Applied Computing: Data Analytics NHT study page of the VCAA website](https://www.vcaa.vic.edu.au/curriculum/vce/vce-northern-hemisphere/nht-studies/Pages/AppliedComputingDataAnalytics.aspx) and notification of their publication is given in the *VCAA Bulletin*.

Details of authentication requirements and administrative arrangements for School Assessed Tasks are published annually in the [*VCE and VCAL Administrative Handbook 2021*](https://www.vcaa.vic.edu.au/administration/vce-vcal-handbook/Pages/index.aspx).

The Authentication record form on pages 17–18 is to be used to record information for each student and must be made available on request by the VCAA.

The SAT has six components. They relate to:

* Unit 3 Outcome 2 (four components)
* Unit 4 Outcome 1 (two components).

Teachers should be aware of the dates for submission of scores into VASS in February and May for the NHT. These dates are published in the 2021/2022 NHT Important Administrative Dates and Assessment Schedule, published annually on the VCAA website. [vcaa.vic.edu.au/pages/schooladmin/admindates/index.aspx](http://www.vcaa.vic.edu.au/pages/schooladmin/admindates/index.aspx)

Unit 3

Data analytics: analysis and design

Outcome 2

Propose a research question, formulate a project plan, collect and analyse data, generate alternative design ideas and represent the preferred design for creating infographics or dynamic data visualisations.

Nature of task

A project plan (Gantt chart) indicating tasks, times, milestones, dependencies and critical path

**And**

A collection of complex data sets that has been referenced

**And**

An analysis that defines the requirements, constraints and scope of infographics or dynamic data visualisations

**And**

A folio of alternative design ideas and detailed design specifications of the preferred design.

Scope of task

Development of a research question

Criterion 1 assesses students’ skills in developing a research question. Students will document a research question as an information problem. Further details regarding the process of developing a research question is in the *Advice for teachers*.

Teachers should have discussions with their students regarding their research question and have a process for approving the research question before students commence their project plan. Students are encouraged to document their ideas to convince their teacher that they will be able to develop the infographics or dynamic data visualisations.

Students will document evidence of their critical and creative thinking to identify, clarify and critically analyse data and the sources of data to be collected as part of the Analysis Stage in Criterion 1. Refer to the Skills underpinning the Analysis Stage in the Units 1 to 4: Problem-solving methodology specifications on page 13 of the study design.

The evidence from this task is observed through Observation 1 and assessed through Criterion 1.

Preparation of a project plan

Criterion 2 assesses students’ skills in project management. Students will prepare a Gantt chart using software that documents all the stages and the activities of the problem-solving methodology for Unit 3 Outcome 2 and Unit 4 Outcome 1 (both parts of the SAT).

Students will need to document all the relevant tasks, sequencing, time allocations, milestones, dependencies and critical path.

The evidence from this task is observed through Observation 2 and assessed through Criterion 2.

Documentation of analysis

Criterion 3 assesses students’ skills in documenting an analysis. Students will document the data they have used to support the research question and document the functional and non-functional requirements, constraints and scope. An example of an outline for developing a research question around the requirements, constraints and scope is in the *Advice for teachers*.

Students will document evidence of their critical and creative thinking through questions and strategies to critically analyse solution requirements as part of the Analysis Stage in Criterion 3. Refer to the Skills underpinning the Analysis Stage in the Units 1 to 4: Problem-solving methodology specifications on page 13 of the study design.

The evidence from this task is observed through Observation 3 and assessed through Criterion 3.

Acquisition and preparation of data

Criterion 4 assesses students’ skills in data collection. Students will acquire data sets from primary and secondary sources using appropriate data acquisition methods, prepare the data for manipulation using data types and data structures and reference the primary and secondary data sources using the APA referencing system.

The evidence from this task is observed through Observation 4 and assessed through Criterion 4.

Design folio

Criterion 5 assesses students’ skills in designing the database and/or spreadsheet solutions and the infographics or dynamic data visualisations. Students will generate two or three alternative design ideas, develop evaluation criteria, with reference to their design ideas and infographics or dynamic data visualisations, and then produce their preferred designs for the infographics or dynamic data visualisations. An example of the process for developing detailed designs is in the *Advice for teachers*.

Students will document evidence of their critical and creative thinking through design ideas, solution requirements and the justification of preferred designs as part of the Design Stage in Criterion 5. Refer to the Skills underpinning the Solution design activity in the Units 1 to 4: Problem-solving methodology specifications on page 14 of the study design.

The evidence from this task is observed through Observation 5 and assessed through Criterion 5.

Issues identified after marking Unit 3 Outcome 2

At the completion of Unit 3 Outcome 2 students may experience issues that will have a negative effect on the development of their infographics or dynamic data visualisations in Unit 4 Outcome 1. Teachers can provide feedback on the quality of the designs, however, the adjustments must be initiated by the student and not directed by the teacher. While students can make changes to their designs, they will not be reassessed and their original score will stand.

Unit 4

Data analytics: development and evaluation

Outcome 1

Develop and evaluate infographics or dynamic data visualisations that present findings in response to a research question, and assess the effectiveness of the project plan in monitoring progress.

Nature of task

Infographics or dynamic data visualisations that present findings in response to a research question

**And**

* an evaluation of the efficiency and effectiveness of infographics or dynamic data visualisations
* an assessment of the effectiveness of the project plan (Gantt chart) in monitoring project progress

in one of the following:

* a written report
* an annotated visual plan.

Scope of task

Development of database and/or spreadsheet solution

Criterion 6 assesses students’ skills in using database and/or spreadsheet software. Students will use a database and/or spreadsheet software tool/s to store and manipulate data, apply appropriate validation techniques and document testing using suitable testing techniques and test data. In order to develop the database and/or spreadsheet solution, students are required to use appropriate software tools to manipulate data that meets the [software requirements](https://www.vcaa.vic.edu.au/curriculum/vce/vce-northern-hemisphere/nht-studies/Pages/AppliedComputingDataAnalytics.aspx) of the study. Further details regarding solution testing are in the *Advice for teachers*.

Students will document evidence of their critical and creative thinking through the modification of their designs and evaluation criteria as part of the Development Stage in Criterion 6. Refer to the Skills underpinning the Design Stage in the Units 1 to 4: Problem-solving methodology specifications on page 15 of the study design.

Criterion 8 assesses students’ skills in managing files. Students will document the procedures for the management of files and propose and implement procedures to manage the security files.

The evidence from this task is observed through Observation 6 and assessed through Criteria 6 and 8.

Development of infographics or dynamic data visualisations solutions

Criterion 7 assesses students’ skills in using data visualisation software. Students will use a data visualisation software tool to create infographics or dynamic data visualisations, apply appropriate validation and verification techniques and document testing using suitable tests and test data. In order to develop the infographics or dynamic data visualisations, students are required to use appropriate software tools to manipulate data that meets the [software requirements](https://www.vcaa.vic.edu.au/curriculum/vce/vce-northern-hemisphere/nht-studies/Pages/AppliedComputingDataAnalytics.aspx) of the study. Further details regarding solution testing are in the *Advice for teachers*.

Students will document evidence of their critical and creative thinking through the modification of their designs and evaluation criteria as part of the Development Stage in Criterion 7. Refer to the Skills underpinning the Design Stage in the Units 1 to 4: Problem-solving methodology specifications on page 15 of the study design.

Criterion 8 assesses students’ skills in managing files. Students will document the procedures for the management of files and propose and implement procedures to manage the security files.

The evidence from this task is observed through Observation 7 and assessed through Criteria 7 and 8.

Evaluation of infographics or dynamic data visualisations solutions

Criterion 9 assesses students’ skills in evaluating the solution. Students will propose strategies for evaluating the efficiency and effectiveness of the infographics or dynamic data visualisations and evaluate the efficiency and effectiveness of the infographics or dynamic data visualisations in meeting requirements.

Students will document evidence of their critical and creative thinking through the evaluation of the analysis, design and development stages and improvements to the solution as part of the Evaluation Stage in Criterion 9. Refer to the Skills underpinning the Solution evaluation activity in the Units 1 to 4: Problem-solving methodology specifications on page 15 of the study design.

The evidence from this task is observed through Observation 8 and assessed through Criterion 9.

Assessment of project plan

Criterion 10 assesses students’ skills in assessing the project plan. Students will document the modifications made to the initial project plan throughout the duration of the project and then assess the effectiveness of the project plan.

The evidence from this task is observed through Observation 9 and assessed through Criterion 10.

The following rubric is used to assess student achievement on Unit 3 Outcome 2 and Unit 4 Outcome 1. It should be noted that each piece of evidence in each criterion is not equally weighted.

The criteria identify specific characteristics that are used to judge levels of performance against the outcomes. Performance descriptors describe typical evidence associated with five different levels of performance for a criterion (five levels; 10 marks).

Criteria 1 to 5 relate to Unit 3 Outcome 2.

Criteria 6 to 10 relate to Unit 4 Outcome 1.

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| **VCE Data Analytics: School-assessed Task 2021/2022 NHT** | | | | | | | |
| **Assessment Criteria** | **Levels of Performance** | | | | | | |
| **Indicators** | **Not shown** | **1–2 (very low)** | **3–4 (low)** | **5–6 (medium)** | **7–8 (high)** | **9–10 (very high)** |
| **Unit 3 Outcome 2**  **1. Skills in developing a research question.** | * Documents a research question as an information problem. | Insufficient evidence | Lists some information as part of a research question. | Outlines some information as part of a research question. | Documents a sound research question as part of an information problem. | Documents a detailed research question as an information problem. | Documents a comprehensive research question as an information problem. |
| * Documents evidence of critical and creative thinking to identify, clarify and critically analyse data and the sources of data to be collected. | Lists some evidence of critical and creative thinking through the identification of the data to be collected. | Outlines some evidence of critical and creative thinking through the identification and analysis of the data to be collected. | Documents some evidence of critical and creative thinking through the identification and analysis of the sources and the data to be collected. | Documents detailed evidence of critical and creative thinking through the identification, clarification and analysis of the sources and the data to be collected. | Documents comprehensively evidence of critical and creative thinking through the identification, clarification and the critical analysis of the sources and the data to be collected. |
|  | 0 ❑ | 1 ❑ 2 ❑ | 3 ❑ 4 ❑ | 5 ❑ 6 ❑ | 7 ❑ 8 ❑ | 9 ❑ 10 ❑ |

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| **VCE Data Analytics: School-assessed Task 2021/2022 NHT** | | | | | | | |
| **Assessment Criteria** | **Levels of Performance** | | | | | | |
| **Indicators** | **Not shown** | **1–2 (very low)** | **3–4 (low)** | **5–6 (medium)** | **7–8 (high)** | **9–10 (very high)** |
| **Unit 3 Outcome 2**  **2. Skills in project management.** | * Prepares a Gantt chart using software that documents all stages and activities of the problem-solving methodology for U3 O2 and  U4 O1. | Insufficient evidence | Prepares a plan using software that documents some of the stages and/or activities of the problem-solving methodology. | Prepares a plan or Gantt chart using software that documents most stages and some activities of the problem-solving methodology for U3 O2 and U4 O1. | Prepares a Gantt chart using software that documents all the stages and some activities of the problem-solving methodology for U3 O2 and U4 O1. | Prepares a Gantt chart using software that documents in detail all the stages and most of the activities of the problem-solving methodology for U3 O2 and U4 O1. | Prepares a Gantt chart using software that comprehensively documents all the stages and activities of the problem-solving methodology for U3 O2 and U4 O1. |
| * Documents all the relevant tasks, sequencing, time allocations, milestones, dependencies and critical path. | Identifies a limited number of relevant tasks, sequencing and time allocations. | Identifies some relevant tasks, sequencing and time allocations. | Documents a range of relevant tasks, sequencing, time allocations, milestones and dependencies. | Documents in detail most of the relevant tasks, sequencing, time allocations, milestones, dependencies and the critical path for the project. | Documents comprehensively all relevant tasks, sequencing, time allocation, milestones, dependencies and the critical path for the project. |
|  | 0 ❑ | 1 ❑ 2 ❑ | 3 ❑ 4 ❑ | 5 ❑ 6 ❑ | 7 ❑ 8 ❑ | 9 ❑ 10 ❑ |

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| **VCE Data Analytics: School-assessed Task 2021/2022 NHT** | | | | | | | |
| **Assessment Criteria** | **Levels of Performance** | | | | | | |
| **Indicators** | **Not shown** | **1–2 (very low)** | **3–4 (low)** | **5–6 (medium)** | **7–8 (high)** | **9–10 (very high)** |
| **Unit 3 Outcome 2**  **3. Skills in documenting analysis.** | * Documents the data used to support the research question. | Insufficient evidence | Identifies limited data to support the research question. | Outlines some data to support the research question. | Documents a range of data to support the research question. | Documents in detail the data used to support the research question. | Documents comprehensively all the data used to support the research question. |
| * Documents the functional and non-functional requirements, constraints and scope. | Lists a limited set of appropriate solution requirements. | Outlines some appropriate solution requirements and constraints. | Documents an appropriate range of functional requirements, constraints and scope. | Documents detailed functional and non-functional solution requirements, constraints and scope. | Documents comprehensively all the functional and non-functional solution requirements, constraints and scope. |
| * Documents evidence of critical and creative thinking through questions and strategies to critically analyse the data and solution requirements. | Lists some evidence of critical and creative thinking through the use of questions to identify solution requirements. | Outlines some evidence of critical and creative thinking through the use of questions to analyse solution requirements. | Documents evidence of critical and creative thinking through the use of questions and strategies to analyse solution requirements. | Documents detailed evidence of critical and creative thinking through the use of questions and strategies to critically analyse the data and solution requirements. | Documents comprehensively evidence of critical and creative thinking through the use of effective questions and strategies to critically analyse the data and solution requirements. |
|  | 0 ❑ | 1 ❑ 2 ❑ | 3 ❑ 4 ❑ | 5 ❑ 6 ❑ | 7 ❑ 8 ❑ | 9 ❑ 10 ❑ |

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| **VCE Data Analytics: School-assessed Task 2021/2022 NHT** | | | | | | | |
| **Assessment Criteria** | **Levels of Performance** | | | | | | |
| **Indicators** | **Not shown** | **1–2 (very low)** | **3–4 (low)** | **5–6 (medium)** | **7–8 (high)** | **9–10 (very high)** |
| **Unit 3 Outcome 2**  **4. Skills in data collection** | * Acquires data sets from primary and secondary data sources. | Insufficient evidence | Acquires a limited data set from a secondary data source. | Acquires some data sets from secondary data sources using limited data acquisition methods. | Acquires a range of data sets from both primary and secondary data sources using some appropriate data acquisition methods. | Acquires multiple data sets from both primary and secondary data sources using a variety of appropriate data acquisition methods. | Acquires a comprehensive collection of data sets from both primary and secondary data sources using a variety of appropriate data acquisition methods. |
| * Prepares data for manipulation and uses data types and data structures. | Prepares limited data for manipulation. | Prepares some data for manipulation including some correct data types. | Prepares a range of data for manipulation including data types and data structures. | Detailed preparation of data for manipulation including data types and data structures. | Comprehensive preparation of all data for manipulation including data types and data structures. |
| * References primary and secondary data using the APA referencing system. | References limited data from secondary sources. | References some data from secondary sources using the APA referencing system. | References a range of primary and secondary data for referencing using the APA referencing system with some appropriate conventions. | References a detailed set of primary and secondary data using the APA referencing system with appropriate conventions. | References a comprehensive set of primary and secondary data using the APA referencing system and applying conventions consistently. |
|  | 0 ❑ | 1 ❑ 2 ❑ | 3 ❑ 4 ❑ | 5 ❑ 6 ❑ | 7 ❑ 8 ❑ | 9 ❑ 10 ❑ |

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| **VCE Data Analytics: School-assessed Task 2021/2022 NHT** | | | | | | | |
| **Assessment Criteria** | **Levels of Performance** | | | | | | |
| **Indicators** | **Not shown** | **1–2 (very low)** | **3–4 (low)** | **5–6 (medium)** | **7–8 (high)** | **9–10 (very high)** |
| **Unit 3 Outcome 2**  **5. Skills in designing the database and/or spreadsheet solutions and the infographics or dynamic data visualisations.** | * Generates alternative design ideas. | Insufficient evidence | Generates two design ideas with limited differences in appearance or functionality. | Generates two design ideas with some modifications in appearance and functionality. | Generates two or three design ideas that represent sound alternatives to appearance and functionality. | Generates two or three design ideas that are feasible alternatives and clearly differ in appearance and functionality. | Generates two or three distinctive design ideas that are feasible and original representations of appearance and functionality. |
| * Develops evaluation criteria with reference to design ideas and infographics or dynamic data visualisations. | Lists some criteria for evaluating design ideas and the infographics or dynamic data visualisations. | Outlines some criteria for evaluating design ideas and the infographics or dynamic data visualisations. | Develops a range of criteria for evaluating alternative design ideas and the effectiveness of the infographics or dynamic data visualisations. | Develops a detailed set of criteria for evaluating alternative design ideas and the efficiency and effectiveness of the infographics or dynamic data visualisations. | Develops a comprehensive set of criteria for evaluating alternative design ideas and the efficiency and effectiveness of the infographics or dynamic data visualisations. |
| * Produces preferred design for infographics or dynamic data visualisations. | Produces the preferred design using limited and incomplete methods. | Produces the preferred design using some appropriate methods and limited reference to the evaluation criteria. | Produces the preferred design using a range of appropriate methods and design principles with reference to some evaluation criteria. | Produces the preferred design in detail using appropriate methods and design principles with reference to most evaluation criteria. | Produces the preferred design comprehensively using appropriate methods and design principles with detailed reference to all evaluation criteria. |
| * Documents evidence of critical and creative thinking through design ideas, solution requirements and justification of preferred designs. | Lists some evidence of critical and creative thinking through the development of connections between ideas and solution requirements. | Outlines some evidence of critical and creative thinking through the development of connections between design ideas and solution requirements. | Documents evidence of critical and creative thinking through the development of connections between design ideas and solution requirements and the justification of the preferred designs. | Documents detailed evidence of critical and creative thinking through the connection of ideas, design ideas, solution requirements and the justification of the preferred designs. | Documents comprehensively evidence of critical and creative thinking through the connection of ideas, the generation of design ideas, solution requirements and the justification of preferred designs. |
|  | 0 ❑ | 1 ❑ 2 ❑ | 3 ❑ 4 ❑ | 5 ❑ 6 ❑ | 7 ❑ 8 ❑ | 9 ❑ 10 ❑ |

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| **VCE Data Analytics: School-assessed Task 2021/2022 NHT** | | | | | | | |
| **Assessment Criteria** | **Levels of Performance** | | | | | | |
| **Indicators** | **Not shown** | **1–2 (very low)** | **3–4 (low)** | **5–6 (medium)** | **7–8 (high)** | **9–10 (very high)** |
| **Unit 4 Outcome 1**  **6. Skills in using database and/or spreadsheet software.** | * Use of database and/or spreadsheet software tool/s to store and manipulate data. | Insufficient evidence | Uses limited features of the database and/or spreadsheet software tool/s to manipulate data. | Uses some features of the database and/or spreadsheet software tool/s to store and manipulate data. | Uses a range of features of the database and/or spreadsheet software tool/s to store and manipulate data. | Uses a wide range of features of the database and/or spreadsheet software tool/s to manipulate data. | Uses a comprehensive range of features of the database and/or spreadsheet software tool/s to manipulate data. |
| * Applies appropriate validation techniques. | Applies limited data validation techniques. | Applies some relevant data validation techniques. | Applies a range of relevant data validation techniques. | Applies a wide range of relevant data validation techniques to check the reasonableness of data. | Applies comprehensive data validation techniques to check the reasonableness and completeness of all input data. |
| * Documents the use of suitable testing techniques and test data. | Lists some suitable testing techniques. | Outlines some suitable testing techniques with some test data. | Documents a range of suitable testing techniques and test data to ensure the solution performs as intended. | Documents a wide range of suitable testing techniques and test data to ensure the solution performs as intended. | Documents a comprehensive range of suitable testing techniques and test data to ensure the full solution performs as intended. |
| * Documents evidence of critical and creative thinking through the modification of designs and evaluation criteria  for solution development. | Lists some evidence of critical and creative thinking through the modification of designs. | Outlines some evidence of critical and creative thinking through the modification and further development of designs. | Documents evidence of critical and creative thinking through the modification of designs and evaluation criteria as well as listing some possible contingencies for solution development. | Documents detailed evidence of critical and creative thinking through the modification of designs and evaluation criteria as well as listing a range of relevant contingencies for solution development. | Documents comprehensively evidence of critical and creative thinking through the modification of designs and evaluation criteria as well as listing a wide range of relevant contingencies for solution development. |
|  | 0 ❑ | 1 ❑ 2 ❑ | 3 ❑ 4 ❑ | 5 ❑ 6 ❑ | 7 ❑ 8 ❑ | 9 ❑ 10 ❑ |

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| **VCE Data Analytics: School-assessed Task 2021/2022 NHT** | | | | | | | |
| **Assessment Criteria** | **Levels of Performance** | | | | | | |
| **Indicators** | **Not shown** | **1–2 (very low)** | **3–4 (low)** | **5–6 (medium)** | **7–8 (high)** | **9–10 (very high)** |
| **Unit 4 Outcome 1**  **7. Skills in  using data visualisation software.** | * Use of data visualisation software tool to create infographics or dynamic data visualisations. | Insufficient evidence | Uses limited functions, formats and conventions to create infographics or dynamic data visualisations. | Uses some functions, formats and conventions to create infographics or dynamic data visualisations. | Uses a range of functions, formats and conventions to create infographics or dynamic data visualisations. | Uses a wide range of suitable functions, formats and conventions to create infographics or dynamic data visualisations. | Uses a comprehensive range of suitable functions, formats and conventions to create infographics or dynamic data visualisations. |
| * Applies appropriate validation and verification techniques. | Applies limited data validation and verification techniques. | Applies some relevant data validation and verification techniques. | Applies a range of relevant data validation and verification techniques. | Applies a wide range of relevant data validation and verification techniques to check the reasonableness of input data. | Applies comprehensive data validation and verification techniques to check the reasonableness and completeness of all input data. |
| * Documents the use of suitable testing techniques to ensure the solution performs as intended. | Lists some suitable testing techniques. | Outlines some suitable testing techniques. | Documents a range of suitable testing techniques to ensure the solution performs as intended. | Documents a wide range of suitable testing techniques to ensure the solution performs as intended. | Documents a comprehensive range of suitable testing techniques to ensure the full solution performs as intended. |
| * Documents evidence of critical and creative thinking through the modification of designs and evaluation criteria. | Lists some evidence of critical and creative thinking through the modification of designs. | Outlines some evidence of critical and creative thinking through the modification and further development of designs. | Documents evidence of critical and creative thinking through the modification of designs and evaluation criteria as well as listing some possible contingencies for solution development. | Documents detailed evidence of critical and creative thinking through the modification of designs and evaluation criteria as well as a range of relevant contingencies for solution development. | Documents comprehensively evidence of critical and creative thinking through the modification of designs and evaluation criteria as well as a wide range of relevant contingencies for solution development. |
|  | 0 ❑ | 1 ❑ 2 ❑ | 3 ❑ 4 ❑ | 5 ❑ 6 ❑ | 7 ❑ 8 ❑ | 9 ❑ 10 ❑ |

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| **VCE Data Analytics: School-assessed Task 2021/2022 NHT** | | | | | | | |
| **Assessment Criteria** | **Levels of Performance** | | | | | | |
| **Indicators** | **Not shown** | **1–2 (very low)** | **3–4 (low)** | **5–6 (medium)** | **7–8 (high)** | **9–10 (very high)** |
| **Unit 4 Outcome 1**  **8. Skills in managing files.** | * Documents procedures for the management of files. | Insufficient evidence | Lists some procedures for managing files. | Outlines some procedures for managing files. | Documents a logical plan for handling and managing files. | Documents a detailed logical plan for the handling and managing of files. | Documents a comprehensive and logical plan for the handling and managing of files. |
| * Proposes and implements procedures to manage the security of files. | Lists some procedures or techniques to secure files. | Outlines some procedures and techniques to secure files. | Proposes and implements a range of procedures and techniques to secure files. | Proposes and implements a wide range of procedures and techniques to secure most files. | Proposes and implements comprehensive procedures and techniques to secure all files. |
|  | 0 ❑ | 1 ❑ 2 ❑ | 3 ❑ 4 ❑ | 5 ❑ 6 ❑ | 7 ❑ 8 ❑ | 9 ❑ 10 ❑ |

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| **VCE Data Analytics: School-assessed Task 2021/2022 NHT** | | | | | | | |
| **Assessment Criteria** | **Levels of Performance** | | | | | | |
| **Indicators** | **Not shown** | **1–2 (very low)** | **3–4 (low)** | **5–6 (medium)** | **7–8 (high)** | **9–10 (very high)** |
| **Unit 4 Outcome 1**  **9. Skills in evaluating the solution.** | * Proposes strategies for evaluating the effectiveness of the infographics or dynamic data visualisations. | Insufficient evidence | Identifies limited feasible strategies for evaluating the effectiveness of the infographics or dynamic data visualisations. | Outlines some feasible strategies for evaluating the effectiveness of the infographics or dynamic data visualisations. | Proposes some feasible strategies for evaluating the effectiveness of the infographics or dynamic data visualisations. | Proposes detailed strategies for evaluating the effectiveness of the infographics or dynamic data visualisations. | Proposes comprehensive strategies for evaluating the effectiveness of the infographics or dynamic data visualisations. |
| * Documents the evaluation of the efficiency and effectiveness of infographics or dynamic data visualisations in meeting requirements. | Describes how some features of the infographics or dynamic data visualisations meet requirements. | Outlines an evaluation of how some of the features of the infographics or dynamic data visualisations meet functional and non-functional requirements. Limited references to the evaluation criteria. | Documents a sound evaluation of efficiency and effectiveness of how the specific features of the infographics or dynamic data visualisations meet functional and non-functional requirements. References some of the evaluation criteria. | Documents a detailed evaluation of efficiency and effectiveness of how most of the specific features of the infographics or dynamic data visualisations meet functional and non-functional requirements. References most of the evaluation criteria. | Documents a comprehensive evaluation of efficiency and effectiveness of how all specific features of the infographics or dynamic data visualisations meet all functional and non-functional requirements. References all the evaluation criteria. |
| * Documents evidence of critical and creative thinking through the evaluation of the analysis, design and development stages and improvements to the solution. | Lists some evidence of critical and creative thinking through the identification of some improvements of the solution. | Outlines some evidence of critical and creative thinking through some evaluation of the analysis, design and development stages and the identification of some improvements to the solution. | Documents evidence of critical and creative thinking through the evaluation of the analysis, design and development stages and the identification of improvements to the solution. | Documents detailed evidence of critical and creative thinking through the evaluation of the analysis, design and development stages and the identification of improvements to the solution. | Documents comprehensively evidence of critical and creative thinking through the evaluation of the analysis, design and development stages and the identification and description of improvements to the solution. |
|  | 0 ❑ | 1 ❑ 2 ❑ | 3 ❑ 4 ❑ | 5 ❑ 6 ❑ | 7 ❑ 8 ❑ | 9 ❑ 10 ❑ |

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| **VCE Data Analytics: School-assessed Task 2021/2022 NHT** | | | | | | | |
| **Assessment Criteria** | **Levels of Performance** | | | | | | |
| **Indicators** | **Not shown** | **1–2 (very low)** | **3–4 (low)** | **5–6 (medium)** | **7–8 (high)** | **9–10 (very high)** |
| **Unit 4 Outcome 1**  **10. Skills in assessing the project plan.** | * Documents the modifications made to the initial project plan throughout the duration of the project. | Insufficient evidence | Lists some adjustments to the initial project plan. | Outlines some adjustments to the initial project plan during the project. | Documents a range of modifications to the initial project plan during the project using some appropriate techniques. | Documents in detail a range of adjustments to the initial project plan during the project using appropriate techniques. | Documents a comprehensive range of adjustments to the initial project plan during the project using a range of appropriate techniques. |
| * Assesses the effectiveness of the project plan. | Lists limited factors that contributed to the effectiveness of the project plan. | Outlines some factors that contributed to the effectiveness of the project plan. | Documents a range of the factors that contributed to the effectiveness of the project plan. | Documents in detail a range of the factors that contributed to the effectiveness of the project plan. | Documents a comprehensive range of factors that contributed to the effectiveness of the project plan. |
|  | 0 ❑ | 1 ❑ 2 ❑ | 3 ❑ 4 ❑ | 5 ❑ 6 ❑ | 7 ❑ 8 ❑ | 9 ❑ 10 ❑ |

Authentication of VCE Applied Computing: Data Analytics (NHT) School-assessed Task (SAT)

Teachers are reminded of the need to comply with the authentication requirements specified in the Assessment: School-based Assessment section of the [*VCE and VCAL* *Administrative Handbook 2021*](https://www.vcaa.vic.edu.au/administration/vce-vcal-handbook/Pages/index.aspx)*.* This is important to ensure that ‘undue assistance [is] not … provided to students while undertaking assessment tasks’.

Teachers must be aware of the following requirements for the authentication of VCE Applied Computing: Data Analytics (NHT) SAT.

1. The body of work created for the SAT is based on work developed and completed in Unit 3 Outcome 2 and Unit 4 Outcome 1.

2. Teachers are required to fill out the Authentication record form and provide the student with feedback on their progress at each observation.

3. Undue assistance should not occur at any time during the development of the body of work, and teachers need to be vigilant. Students are required to demonstrate development of their thinking and working practices. Teachers are reminded that it is not appropriate to provide ‘detailed advice on, corrections to, or actual reworking of students’ work’.

4. Teachers must sight and monitor the development and documentation of the student’s thinking and working practices throughout the unit to authenticate the work as the student’s own. Students must acknowledge the source of materials and information used to support the development of their work.

5. Students should be encouraged to complete their work at school. Where students use external service providers, their documentation should demonstrate ongoing progress throughout the SAT.

6. During the generation of the software solution, teachers must plan and use observations of student work in order to monitor and record each student’s progress as part of the authentication process. Teachers must ensure that all source and reference material, all use of non-school (home, outsourced) resources and any external assistance (for example, tutors) are acknowledged on the Authentication record form. If a student acknowledges using external resources or receiving external assistance, the teacher should record complete details as an attachment to the Authentication record form.

7. Teachers are reminded that the authentication procedures must be followed for all student work in relation to this SAT. The School-based Assessment Audit includes the inspection of Authentication record forms.

Authentication record form: VCE Applied Computing: Unit 3 Data Analytics SAT 2021/2022 NHT

This form must be completed by the class teacher. It provides a record of the monitoring of the student’s work in progress for authentication purposes. This form is to be retained by the school and filed.   
It may be collected by the VCAA as part of the School-based Assessment Audit. **This form is to be used for 2021/2022 NHT ONLY.**

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Student name …………………………………………………………….. Student No

School …………………………………………………………………… Teacher: ……………………………………..…………………………………………….

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| **Component of School-assessed Task** | **Date observed/ submitted** | **Authentication comments** | **Teacher’s initials** | **Student’s initials** |
| **Observation 1: Development of a research question**  **(Criterion 1)**  The student is developing/has developed a research question that enables findings to be presented as infographics or dynamic data visualisations. The teacher has approved or not approved the research question. | Observed | Observation of development of research question |  |  |
| Submitted | Submission of research question |  |  |
| **Observation 2: Preparation of project plan**  **(Criterion 2)**  The student is preparing/has prepared a Gantt chart for both parts of the SAT (Unit 3 Outcome 2 and Unit 4 Outcome 1). | Observed | Observation of the preparation of the project plan |  |  |
| Submitted | Submission of project plan |  |  |
| **Observation 3: Documentation of analysis**  **(Criterion 3)** The student is documenting/has documented the analysis of data, requirements, constraints and scope. | Observed | Observation of the documentation of the analysis |  |  |
| Submitted | Submission of the analysis |  |  |
| **Observation 4: Acquisition and preparation of data  (Criterion 4)**  The student is identifying and manipulating data/has identified and manipulated data. | Observed | Observation of the identifying and manipulating of data |  |  |
| Submitted | Submission of identified and manipulated data |  |  |
| **Observation 5: Design folio**  **(Criterion 5)**  The student is developing/has developed a folio of design ideas, evaluation criteria and preferred detailed design. | Observed | Observation of the development of designs |  |  |
| Submitted | Submission of design folio |  |  |

I declare that all resource materials and assistance used have been acknowledged and that all unacknowledged work is my own.

Student signature …………………………………………… Date …………………………………

Authentication record form: VCE Applied Computing: Unit 4 Data Analytics SAT 2021/2022 NHT

This form must be completed by the class teacher. It provides a record of the monitoring of the student’s work in progress for authentication purposes. This form is to be retained by the school and filed.   
It may be collected by the VCAA as part of the School-based Assessment Audit. **This form is to be used for 2021/2022 NHT ONLY.**

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Student name …………………………………………………………….. Student No

School …………………………………………………………………… Teacher: ……………………………………..…………………………………………….

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| --- | --- | --- | --- | --- |
| **Component of School-assessed Task** | **Date observed/ submitted** | **Authentication comments** | **Teacher’s initials** | **Student’s initials** |
| **Observation 6: Development of database and/or spreadsheet solution**  **(Criterion 6 and 8)**  The student is developing and testing/has developed and tested the database and/or spreadsheet solution. The student has proposed/implemented file management procedures. | Observed | Observation of the development of the database and/or spreadsheet solution |  |  |
| Submitted | Submission of the database and/or spreadsheet solution |  |  |
| **Observation 7: Development of infographics or dynamic data visualisations solutions**  **(Criterion 7 and 8)**  The student is developing and testing/has developed and tested the infographics or dynamic data visualisations solutions. The student has proposed/implemented file management procedures. | Observed | Observation of the development of infographics or dynamic data visualisations solutions |  |  |
| Submitted | Submission of the infographics or dynamic data visualisations solutions |  |  |
| **Observation 8: Evaluation of infographics or dynamic data visualisations solutions**  **(Criterion 9)**  The student is documenting/has documented the evaluation of the infographics or dynamic data visualisations solutions. | Observed | Observation of the development of the evaluation |  |  |
| Submitted | Submission of the evaluation |  |  |
| **Observation 9: Assessment of project plan**  **(Criterion 10)**  The student is documenting/has documented the assessment of the project plan. | Observed | Observation of the development of the assessment of the project plan |  |  |
| Submitted | Submission |  |  |

I declare that all resource materials and assistance used have been acknowledged and that all unacknowledged work is my own.

Student signature …………………………………………… Date …………………………………

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| **2021/2022 NHT** | Victorian Certificate of Education  Applied Computing: Data Analytics Assessment Sheet  School-assessed Task | | | | | | | | | | | STUDENT NAME | | | | | | | | | | |
| This assessment sheet will assist teachers to determine their score for each student. Teachers need to make judgments on the student’s performance for each criterion. Teachers will be required to choose one number from 0–10 to indicate how the student performed on each criterion with comments, as appropriate. Teachers then add the subtotals to determine the total score. **This sheet is to be used for 2021/2022 NHT ONLY.** | | | | | | | | | | | | student number | |  |  |  |  |  |  |  |  |  |
| assessing school number | | | | | |  |  |  |  |  |
|  | | | | | | | | | | | |  | | | | | | | | | | |
| **Criteria for the award of grades** | | | Not Shown (0) | Very Low (1–2) | Low  (3–4) | | | Med  (5–6) | High  (7–8) | | Very High (9–10) | **Performance on Criteria: Teacher’s Comments**  You may wish to comment on aspects of the student’s work that led to your assessment. | | | | | | | | | | |
| **The extent to which the student demonstrates:** | | |  |  |  | | |  |  | |  |
| 1 skills in developing a research question | | |  |  |  | | |  |  | |  |
| 2 skills in project management | | |  |  |  | | |  |  | |  |
| 3 skills in documenting analysis | | |  |  |  | | |  |  | |  |
| 4 skills in data collection | | |  |  |  | | |  |  | |  |
| 5 skills in designing the database and/or spreadsheet solutions and the infographics or dynamic data visualisations | | |  |  |  | | |  |  | |  |
| 6 skills in using database and/or spreadsheet software | | |  |  |  | | |  |  | |  |
| 7 skills in using data visualisation software | | |  |  |  | | |  |  | |  |
| 8 skills in managing files | | |  |  |  | | |  |  | |  |
| 9 skills in evaluating the solution | | |  |  |  | | |  |  | |  |
| 10 skills in assessing the project plan. | | |  |  |  | | |  |  | |  |
| If a student does not submit the School-assessed Task  at all, N/A should be entered in the total score box. | | **SUBTOTALS** |  |  | |  |  | | |  |  | |  | | | | | | | | | |

**TOTAL SCORE**