

# VCE Data Analytics

## School-assessed Task 2024

### Video 3

### Unit 4 Outcome 1

### SAT Criteria 6–10

# Acknowledgement of Country

The VCAA respectfully acknowledges the Traditional Owners of Country throughout Victoria and pays respect to the ongoing living cultures of First Peoples.



# VCE Data Analytics

## School-assessed Task 2024

### Video 3

### Unit 4 Outcome 1

### SAT Criteria 6–10

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VCAA



# Outline of presentation

- Nature of task
- SAT Criteria 6–10
- Authentication
- Assessment

# Nature of task

# Unit 4 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.

# **Unpacking the criteria**

## **Criteria 6–10**

### **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** of the study.

Further details regarding solution testing are in the *Advice for teachers*.

# Development of database and/or spreadsheet solution

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 of files.

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

# Criterion 6

VCE Data Analytics: School-assessed Task 2024																					
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  <b>6. Skills in using database and/or spreadsheet software.</b> <ul style="list-style-type: none"> <li>Use of database and/or spreadsheet software tool(s) to store and manipulate data.</li> <li>Applies appropriate validation techniques.</li> <li>Documents the use of suitable testing techniques and test data.</li> <li>Documents evidence of critical and creative thinking through the modification of designs and evaluation criteria for solution development.</li> </ul>	Insufficient evidence	Uses limited features of the database and/or spreadsheet software tool(s) to manipulate data.	Applies limited data validation techniques.	Lists some suitable testing techniques.	Lists some evidence of critical and creative thinking through the modification of designs.	Uses some features of the database and/or spreadsheet software tool(s) to store and manipulate data.	Applies some relevant data validation techniques.	Outlines some suitable testing techniques with some test data.	Outlines some evidence of critical and creative thinking through the modification and further development of designs.	Uses a range of features of the database and/or spreadsheet software tool(s) to store and manipulate data.	Applies a range of relevant data validation techniques.	Documents a range of suitable testing techniques and test data to ensure the solution performs as intended.	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.	Uses a wide range of features of the database and/or spreadsheet software tool(s) to manipulate data.	Applies a wide range of relevant data validation techniques to check the reasonableness of data.	Documents a wide range of suitable testing techniques and test data to ensure the solution performs as intended.	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.	Uses a comprehensive range of features of the database and/or spreadsheet software tool(s) to manipulate data.	Applies comprehensive data validation techniques to check the reasonableness and completeness of all input data.	Documents a comprehensive range of suitable testing techniques and test data to ensure the full solution performs as intended.	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 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/>	3 <input type="checkbox"/> 4 <input type="checkbox"/>	5 <input type="checkbox"/> 6 <input type="checkbox"/>	7 <input type="checkbox"/> 8 <input type="checkbox"/>	9 <input type="checkbox"/> 10 <input type="checkbox"/>														

# 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 of the study.

Further details regarding solution testing are in the *Advice for teachers*.

# Development of infographics or dynamic data visualisations solutions

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 of files.

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

# Criterion 7

VCE Data Analytics: School-assessed Task 2024							
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.	<ul style="list-style-type: none"> <li>Use of data visualisation software tool to create infographics or dynamic data visualisations.</li> <li>Applies appropriate validation and verification techniques.</li> <li>Documents the use of suitable testing techniques to ensure the solution performs as intended.</li> <li>Documents evidence of critical and creative thinking through the modification of designs and evaluation criteria.</li> </ul>	Insufficient evidence	Uses limited functions, formats and conventions to create infographics or dynamic data visualisations.  Applies limited data validation and verification techniques.  Lists some suitable testing techniques.  Lists some evidence of critical and creative thinking through the modification of designs.	Uses some functions, formats and conventions to create infographics or dynamic data visualisations.  Applies some relevant data validation and verification techniques.  Outlines some suitable testing techniques.  Outlines some evidence of critical and creative thinking through the modification and further development of designs.	Uses a range of functions, formats and conventions to create infographics or dynamic data visualisations.  Applies a range of relevant data validation and verification techniques.  Documents a range of suitable testing techniques to ensure the solution performs as intended.  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.	Uses a wide range of suitable functions, formats and conventions to create infographics or dynamic data visualisations.  Applies a wide range of relevant data validation and verification techniques to check the reasonableness of input data.  Documents a wide range of suitable testing techniques to ensure the solution performs as intended.  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.	Uses a comprehensive range of suitable functions, formats and conventions to create infographics or dynamic data visualisations.  Applies comprehensive data validation and verification techniques to check the reasonableness and completeness of all input data.  Documents a comprehensive range of suitable testing techniques to ensure the full solution performs as intended.  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 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/>	3 <input type="checkbox"/> 4 <input type="checkbox"/>	5 <input type="checkbox"/> 6 <input type="checkbox"/>	7 <input type="checkbox"/> 8 <input type="checkbox"/>	9 <input type="checkbox"/> 10 <input type="checkbox"/>

# An approach to developing infographics or dynamic data visualisations

In order to develop their infographics or dynamic data visualisations students are required to use appropriate software tools to manipulate data that meets the **software tools and functions** document.

Appropriate functions, techniques and procedures for the selected software tools are to be used, along with techniques for creating the infographics or dynamic data visualisations and techniques for validating and verifying data.

Students may choose to create either infographics or dynamic data visualisations. They do not create both.

There are a number of methods and techniques that students can use to achieve this requirement, from creating movies to using specialised software.

*From the Advice for teachers*

# An approach to testing the solution

Students should robustly test their database, spreadsheet and infographics or dynamic data visualisation solutions to fully ensure that they meet the requirements of the area of study.

Functionality and validation testing are expected to be documented through the use of testing tables.

Testing tables are to include both expected and actual results, along with clear descriptions of the test to be performed and the test data to use in each test.

Students should be encouraged to include in their documentation all tests that have failed, including actions and mitigations taken, in order to demonstrate the changes made as a result of a robust testing process.

*From the Advice for teachers*



# Criterion 8

## VCE Data Analytics: School-assessed Task 2024

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)			
<b>Unit 4 Outcome 1</b>  <b>8. Skills in managing files.</b> <ul style="list-style-type: none"> <li>Documents procedures for the management of files.</li> <li>Proposes and implements procedures to manage the security of files.</li> </ul>	Insufficient evidence	Lists some procedures for managing files.  Lists some procedures or techniques to secure files.	Outlines some procedures for managing files.  Outlines some procedures and techniques to secure files.	Documents a logical plan for handling and managing files.  Proposes and implements a range of procedures and techniques to secure files.	Documents a detailed logical plan for the handling and managing of files.  Proposes and implements a wide range of procedures and techniques to secure most files.	Documents a comprehensive and logical plan for the handling and managing of files.  Proposes and implements comprehensive procedures and techniques to secure all files.				
0 <input type="checkbox"/>							1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>

# An approach to managing files

Refer to the first Key knowledge dot point in Unit 4 Outcome 1:

- procedures and techniques for handling and managing files, including archiving, backing up, disposing of files and security

Students need to document their procedures for the handling and managing of files and the security of files. Consider what and when files will be archived, backed up and disposed of. How will files be made secure?

# Evaluation of infographics or dynamic data visualisations

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.

# Criterion 9

VCE Data Analytics: School-assessed Task 2024							
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.	<ul style="list-style-type: none"> <li>Proposes strategies for evaluating the effectiveness of the infographics or dynamic data visualisations.</li> <li>Documents the evaluation of the efficiency and effectiveness of infographics or dynamic data visualisations in meeting requirements.</li> <li>Documents evidence of critical and creative thinking through the evaluation of the analysis, design and development stages and improvements to the solution.</li> </ul>	Insufficient evidence	<p>Identifies limited feasible strategies for evaluating the effectiveness of the infographics or dynamic data visualisations.</p> <p>Describes how some features of the infographics or dynamic data visualisations meet requirements.</p> <p>Lists some evidence of critical and creative thinking through the identification of some improvements of the solution.</p>	<p>Outlines some feasible strategies for evaluating the effectiveness of the infographics or dynamic data visualisations.</p> <p>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.</p> <p>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.</p>	<p>Proposes some feasible strategies for evaluating the effectiveness of the infographics or dynamic data visualisations.</p> <p>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.</p> <p>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.</p>	<p>Proposes detailed strategies for evaluating the effectiveness of the infographics or dynamic data visualisations.</p> <p>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.</p> <p>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.</p>	<p>Proposes comprehensive strategies for evaluating the effectiveness of the infographics or dynamic data visualisations.</p> <p>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.</p> <p>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.</p>
		0 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/>	3 <input type="checkbox"/> 4 <input type="checkbox"/>	5 <input type="checkbox"/> 6 <input type="checkbox"/>	7 <input type="checkbox"/> 8 <input type="checkbox"/>	9 <input type="checkbox"/> 10 <input type="checkbox"/>

# An approach to evaluating the infographics or dynamic data visualisations

Students should use their evaluation criteria developed in Unit 3 Outcome 2 when evaluating the efficiency and effectiveness of their infographics or dynamic data visualisations.

The proposed evaluation strategy should evaluate the extent to which the infographics or dynamic data visualisations present the findings of the research question.

*From the Advice for teachers*



VICTORIAN CURRICULUM  
AND ASSESSMENT AUTHORITY



VICTORIA  
State  
Government

# 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.

# Criterion 10

## VCE Data Analytics: School-assessed Task 2024

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)				
<b>Unit 4 Outcome 1</b>  <b>10. Skills in assessing the project plan.</b> <ul style="list-style-type: none"> <li>Documents the modifications made to the initial project plan throughout the duration of the project.</li> <li>Assesses the effectiveness of the project plan.</li> </ul>	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.					
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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>	10 <input type="checkbox"/>

# An approach to assessing the project plan

Throughout the SAT process, students should be collecting evidence to support the assessment of the project plan in managing the project.

While not an exhaustive list, this evidence may take the form of progress journals, annotations to the project plan, screenshots of infographics or dynamic data visualisations, photographs of design iterations and annotated drafts of diagrams.

*From the Advice for teachers*



# Authentication

# Authentication

## Authentication record form: VCE Applied Computing: Unit 4 Data Analytics SAT 2024

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.

Student name ..... Student No 

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

Component of School-assessed Task	Date observed/ submitted	Authentication comments	Teacher's initials	Student's initials
<b>Observation 6: Development of database and/or spreadsheet solution (Criterion 6 and 8)</b> 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		
<b>Observation 7: Development of infographics or dynamic data visualisations solutions (Criterion 7 and 8)</b> 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		
<b>Observation 8: Evaluation of infographics or dynamic data visualisations solutions (Criterion 9)</b> 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		
<b>Observation 9: Assessment of project plan (Criterion 10)</b> 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 of the assessment of the project plan		

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

Student signature ..... Date .....

# Assessment

# Assessment

## 2024

### 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.

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.	
<b>The extent to which the student demonstrates:</b>								
1 skills in developing a research question	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
2 skills in project management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3 skills in documenting analysis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4 skills in data collection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
5 skills in designing the database and/or spreadsheet solutions and the infographics or dynamic data visualisations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
6 skills in using database and/or spreadsheet software	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
7 skills in using data visualisation software	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
8 skills in managing files	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
9 skills in evaluating the solution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
10 skills in assessing the project plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
If a student does not submit the School-assessed Task at all, N/A should be entered in the total score box.	<b>SUBTOTALS</b>						<input type="checkbox"/>	

TOTAL SCORE

# Contact

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