Enterprise Computing Stage 6 (Year 12) – sample assessment task 2 notification

Data visualisation

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# About this resource

## Purpose of resource

This sample assessment task unpacks how teachers can assess students in the Data visualisation focus area for Enterprise Computing Year 12.

## Target audience

This resource can be used to support teachers with effective syllabus implementation.

## When and how to use

This resource is designed for assessing students in the Data visualisation focus area. The resource can be adapted to suit the context of the school. This is sample assessment 2 of 4. Teachers can also refer to the sample scope and sequence and assessment schedule. The task is weighted at 20% and requires students to create a product and documentation.

# Task description

**Type of task**: develop a data visualisation product with documentation.

**Outcomes being assessed**:

A student:

* explains how systems meet the needs of a range of enterprises **EC-12-01**
* applies tools and resources to analyse complex datasets **EC-12-05**
* analyses how innovative technologies have influenced enterprise computing systems   
  **EC-12-06**
* communicates an enterprise computing solution to a specific audience **EC-12-11**

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**Suggested weighting**: 20%

Design and develop data visualisations for a specific scenario to represent trends, patterns and relationships. Create documentation to support your approach to designing and developing your data visualisations.

1. Research, source, organise and store data appropriate for a data visualisation on an enterprise, social or ethical issue.
2. Create data visualisations based on emerging patterns in data by interpreting and comparing datasets to highlight trends and for predictive data analytics.
3. Design and develop a data visualisation for a specific scenario to represent trends, patterns and relationships.
4. Develop criteria for effectiveness and use peer and self-evaluation to assess the data visualisation.

## Submission details

Students submit their documentation digitally.

Students can:

* prepare a word-processed report with relevant charts and analysis within the document to present

and/or

* create a presentation slide deck or PowerPoint to present

and/or

* create a video presentation of your findings.

Students should be provided the opportunity to showcase their work in a presentation including a question-and-answer segment.

Opportunities for students to peer-assess their classmate’s work should be explored. This will enable an exchange of ideas to inform future tasks and projects.

This project may inform the design and development of the student’s Enterprise Project during the Year 12 course.

# Steps to success

Table 1 – assessment preparation schedule

|  |  |
| --- | --- |
| Steps | What I need to do |
| Identifying and defining  Identify a valid dataset. | * Identify, download and acknowledge a valid data source to create a data visualisation. * Seek your teacher's approval to use the dataset. |
| Researching and planning  Explain how your proposed solution will have the data required to create a data visualisation. | Explain your answers to the following questions about handling data.   * What am I hoping to understand? * What do I need to know to make a certain business decision? * What story is the data telling? * What do the relationships between variables mean for certain people? * What if something changed? Which variables, trends or forecasts would be impacted? * What needs to change in the data to get the desired outcome? * Why does the data trend in this direction and what does it mean for the future? * How can I further analyse the data to get the answers needed to make important decision? |
| Producing and implementing  Analyse data to tell a relevant and compelling story. | * Use a variety of tools to analyse your dataset. * Use graphic design tools to assist in the graphic development of a data visualisation. * Create data visualisations that capture the data accurately and do not have bias. |
| Testing and evaluating  Review and improve. | * Develop and implement criteria for evaluating the effectiveness of user experiences. * Seek peer-review and feedback. |

# What is the teacher looking for?

This task will require students to demonstrate their ability to identify and use relevant data to develop effective visualisations that represent trends, patterns and relationships.

Students investigate how to source, organise, and interpret complex datasets to design visualisations that communicate meaningful insights clearly.

Students explore the use of various data visualisation tools and techniques to ensure that their final product is accurate, accessible and free from bias.

Students’ understanding will be assessed based on the clarity, relevance and effectiveness of their data visualisation and documentation, reflecting their grasp of enterprise computing principles.

# Marking guidelines

Table 2 – assessment marking guidelines

|  |  |
| --- | --- |
| Grade | Marking guideline descriptors |
| A | The student:   * demonstrates extensive knowledge and understanding of the application of data, tools and resources in developing enterprise computing solutions * demonstrates comprehensive understanding of the influence of technologies on the development of enterprise computing solutions * collects, analyses and uses complex data and information effectively * manages data safely and securely. |
| B | The student:   * demonstrates thorough knowledge and understanding of the application of data, tools and resources in developing enterprise computing solutions * demonstrates broad understanding of the influence of technologies on the development of enterprise computing solutions * collects, analyses and uses data and information effectively * manages data safely and securely. |
| C | The student:   * demonstrates sound knowledge and understanding of the application of data, tools and resources in developing enterprise computing solutions * demonstrates sound understanding of the influence of technologies on the development of enterprise computing solutions * collects, interprets and uses data and information appropriately * uses data safely and securely |
| D | The student:   * demonstrates basic knowledge and understanding of the application of data, tools and resources * demonstrates basic understanding of the use of technologies in the development of enterprise computing solutions * collects and uses data and information * displays basic skills in developing enterprise computing projects |
| E | The student:   * demonstrates elementary knowledge and understanding of enterprise computing concepts and/or solutions * identifies safe and/or secure data and information |

[Performance band descriptors for Enterprise Computing](https://curriculum.nsw.edu.au/learning-areas/tas/enterprise-computing-11-12-2022/assessment#performance-band-descriptions-for-enterprise-computing-enterprise_computing_11_12_2022)

# Student-facing rubric

Table 3 – rubric for assessment

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Criteria | Limited | Basic | Sound | High | Outstanding |
| Data selection and relevance EC-12-01 | The student selects irrelevant or inappropriate data that does not align with the task or enterprise objectives. | The student selects data that is somewhat relevant but may not fully address enterprise needs or problems. | The student selects data that is appropriate but may lack complexity or relevance to broader enterprise contexts. | The student selects relevant data that reflects a clear understanding of enterprise needs, with a strong connection to real-world issues. | The student selects highly relevant and complex data that is directly related to a real-world business problem. Demonstrates a deep understanding of how the data is applied in an enterprise context. |
| Analysis and interpretation of data  EC-12-05 | Shows minimal or inaccurate analysis of the data, with limited to no meaningful insights or connections drawn. | Demonstrates basic analysis, with some misunderstandings or superficial identification of trends or absent depth in insights. | Shows satisfactory ability to analyse data, with sound identification of trends, though some insights may lack depth or accuracy. | Demonstrates strong analytical skills, with reliable identification of trends and relationships that are mostly accurate and relevant. | Demonstrates exceptional skill in analysing data, identifying key trends, and interpreting relationships using complex formulas and functions and advanced use of graphing. |
| Quality of data visualisation  EC-12-11 | Data visualisations are incomplete or inaccurate, providing little to no useful insights. Presentation is poor or incomplete. | Data visualisations are basic, with some inaccuracies or unclear communication. Presentation lacks polish or professionalism. | Data visualisations are functional and logical, though may lack clarity or depth. Insights are basic and presentation could be improved. | Data visualisations are clear and mostly accurate, effectively communicating the data with good insight. Presentation is solid, though not as creative or polished. | Data visualisations are clear, accurate, highly effective, and creatively communicate complex information. Visuals provide deep insights and are professionally presented. |
| Innovation and use of technology  EC-12-06 | Shows minimal or no understanding of innovative technologies in data visualisation, with poor or inappropriate tool use. | Demonstrates limited understanding of tools and technologies, with basic or minimal use of data visualisation techniques. | Demonstrates a sound understanding of the tools and technologies used in data visualisation, with satisfactory application, though little exploration of innovation. | Shows a good understanding of innovative technologies in data visualisation and effectively uses appropriate tools, with some exploration of their influence on enterprises. | Demonstrates an excellent understanding of innovative technologies in data visualisation and integrates advanced tools with precision. Shows insight into how technology shapes enterprise solutions. |
| Documentation and reporting  EC-12-11 | The report and presentation are incomplete or poorly structured, with little to no explanation of data or decision-making. | The report and presentation lacks organisation and clarity, with basic explanation of the data and decision-making process. | The report and presentation are sound but aspects may lack clarity or detail. The explanation of the data and decision-making process is sound. | The report and presentation are well-organised and clear, providing thorough explanations of data and decisions, though some details may be absent. Language is mostly appropriate for the target audience. | The report and presentation are highly detailed, well-organised, and insightful, clearly explaining the data and the decision-making process. Language is appropriate for the target audience, with strong attention to clarity and detail. |
| Reflection and peer-feedback | Little to no reflection is demonstrated, and peer-feedback is ignored. | Shows limited reflection and does not use peer-feedback effectively. | Demonstrates sound reflection and incorporates minimal peer-feedback. | Shows thorough reflection on the work and uses some peer-feedback to make improvements. | Demonstrates deep reflection on their own work and incorporates peer-feedback effectively to improve the final product. |
| Safe and ethical use of data  EC-12-05 | Demonstrates little to no understanding of ethical data use, with poor management of data and missing references. | Shows basic understanding of ethical data use, with notable lapses in data security or references. | Demonstrates a sound understanding of ethical data use, though some aspects of security or source references may be absent. | Shows a high level of understanding of ethical data use, including security practices and references. | Demonstrates an outstanding understanding of ethical data use, ensuring all data is managed safely and securely with clear references of sources. |

# Student support material

* Teacher support resource with scaffolds, templates and graphic organisers for completing the task
* Teacher support resource with additional information to support student understanding
* Program of learning.

# Support and alignment

**Resource evaluation and support**: all curriculum resources are prepared through a rigorous process. Resources are periodically reviewed as part of our ongoing evaluation plan to ensure currency, relevance and effectiveness. For additional support or advice contact the TAS curriculum team by emailing [TAS@det.nsw.edu.au](mailto:TAS@det.nsw.edu.au).

**Differentiation:** further advice to support Aboriginal and Torres Strait Islander students, English as an additional language or dialect (EAL/D) students, students with a disability and/or additional needs and High Potential and Gifted students (HPG) can be found on the [Planning programming and assessing 7–12](https://education.nsw.gov.au/teaching-and-learning/curriculum/planning-programming-and-assessing-k-12/planning-programming-and-assessing-7-12) webpage. This includes the [Inclusion and differentiation 7–10 advice](https://education.nsw.gov.au/teaching-and-learning/curriculum/planning-programming-and-assessing-k-12/planning-programming-and-assessing-7-12/inclusion-and-differentiation-advice-7-10) webpage.

**Assessment**: further advice to support formative assessment is available on the [Planning programming and assessing 7–12](https://education.nsw.gov.au/teaching-and-learning/curriculum/planning-programming-and-assessing-k-12/planning-programming-and-assessing-7-12) webpage. This includes the [Classroom assessment advice 7–10](https://education.nsw.gov.au/teaching-and-learning/curriculum/planning-programming-and-assessing-k-12/planning-programming-and-assessing-7-12/classroom-assessment-advice-7-10-). For summative assessment tasks, the [Assessment task advice 7–10](https://education.nsw.gov.au/teaching-and-learning/curriculum/planning-programming-and-assessing-k-12/planning-programming-and-assessing-7-12/assessment-task-advice-7-10) webpage is available.

**Consulted with**: Curriculum and Reform and subject matter experts

**Alignment to system priorities and/or needs**: [School Excellence Policy](https://education.nsw.gov.au/policy-library/policies/pd-2016-0468)

**Alignment to the School Excellence Framework**: this resource supports the [School Excellence Framework](https://education.nsw.gov.au/inside-the-department/directory-a-z/strategic-school-improvement/school-excellence-framework) elements of curriculum (curriculum provision) and effective classroom practice (lesson planning, explicit teaching).

**Alignment to Australian Professional Teaching Standards**: this resource supports teachers to address [Australian Professional Teaching Standards](https://educationstandards.nsw.edu.au/wps/portal/nesa/teacher-accreditation/meeting-requirements/the-standards/proficient-teacher) **3.1.2, 3.3.2, 3.4.2, 5.1.2.**

**Creation date: 2024**

# Evidence base

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[Enterprise Computing 11–12 course specifications](https://curriculum.nsw.edu.au/learning-areas/tas/enterprise-computing-11-12-2022/overview#:~:text=30-,Enterprise%20Computing%20course%20specifications,-Enterprise%20Computing%20Course) © NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South Wales, 2022.

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