Enterprise Computing Stage 6 (Year 11) – sample assessment task 2 notification

**Networking systems and social computing**

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# Task description

**Type of task:** create a network and use video to document the network.

**Outcomes being assessed:**

A student:

* describes how systems are used in a range of enterprises **EC-11-01**
* describes how data is safely and securely collected, stored and manipulated when developing enterprise computing systems **EC-11-03**
* describes how data is used in enterprise computing systems **EC-11-04**
* explains how innovative technologies have influenced enterprise computing systems **EC-11-06**
* explores the social, ethical and legal implications of the application of enterprise computing systems on the individual, society and the environment **EC-11-07**
* documents the management and evaluates the development of an enterprise solution **EC-11-09**

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**Suggested weighting:** 35%

Students may access networking equipment at school, or examine their own home network or that of an investigated enterprise system including a local business or researched organisation. Students who are unable to physically model a network may use software to virtually create their network using a network simulator.

Inspired by the Internet of Things (IoT) students design and model a network of interconnected devices for a specific purpose and create a video to showcase their project.

Students create a video of a network. This video may include footage of components being configured and networked and include visuals such as diagrams and a network simulator to showcase their interconnected devices.

# Submission details

Students submit a video of their network model. The model may be recorded and filmed or if a virtual network students can use software that creates screen recordings.

Students submit their documentation digitally.

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

Opportunities should also be explored for students to peer assess their classmate’s work.

This will enable a forum for the exchange of ideas that may help inform future tasks and projects.

This project may be used to 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  Investigate how you will design and model a network to communicate information for a specific purpose. | * Design and model a network of interconnected devices for a specific purpose. * Choose an environment or location to represent and model a network. * Define the specific purpose of the network. * Examine what IoTs are used in the network. |
| Research and planning  Document using project management tools.  Plan the video you will create to showcase your network. | * Apply appropriate project management tools to develop a project by creating a storyboard and script to plan the video. * Use voice narration, titles, relevant graphics, diagrams or videos to describe how systems are used in enterprises and how data is safely and securely collected, stored and manipulated when developing enterprise computing systems. * Use voice narration, titles, relevant graphics, diagrams or videos to explain how innovative technologies have influenced systems and explores the social, ethical and legal implications of the application of enterprise computing systems on the individual, society and the environment. |
| Producing and implementing  Develop your network of interconnected devices with naming conventions and update devices that are configured with safety protocols, and ensure they can connect to the internet. | * Video record how you configure devices within a network   Including   * naming the device * updating the device * configuring security protocols * connecting to the internet. |
| Producing and implementing  Develop your network of interconnected devices considering security protocols and cybersecurity.  Develop your network of interconnected devices optimising network performance. | * Implement procedures and security protocols considering cybersecurity. * Explore opportunities for optimising network performance   Including   * improving bandwidth * updating drivers and firmware. |
| Testing and evaluating  Review and improve your network of interconnected devices. | * Evaluate the role of hardware and software related to the transmission of data   Including   * unsecured data * encrypted data * infrastructure. |

# What is the teacher looking for?

This task will require students to choose a networked environment to model and can be inspired by the Internet of Things. This chosen system will be investigated and examined. Through completing the steps, students begin examining how they will design and model a network to communicate information for a specific purpose.

Students plan to create a video. The video will encompass explaining the network using voice narration, titles, relevant graphics, diagrams, or videos. Students prepare for their video by creating a storyboard and script.

Students explore configuring a device and show in the video how to name the device, update the device, configure security protocols, connect to the internet, implement procedures and security protocols considering cybersecurity. Students explore opportunities for optimising network performance, including improving bandwidth and updating drivers and firmware.

Projects should evaluate the role of hardware and software related to the transmission of data including unsecured data, encrypted data and infrastructure.

# Marking guidelines

Table 2 – assessment marking guidelines

|  |  |
| --- | --- |
| Grade | Marking guideline descriptors |
| A | The student demonstrates extensive knowledge of content and understanding of course concepts and applies highly developed skills and processes in a wide variety of contexts.  In addition, the student demonstrates creative and critical thinking skills using perceptive analysis and evaluation. The student effectively communicates complex ideas and information. |
| B | **The student demonstrates thorough knowledge of content and understanding of course concepts and applies well-developed skills and processes in a variety of contexts.**  **In addition, the student demonstrates creative and critical thinking skills using analysis and evaluation. The student clearly communicates complex ideas and information.** |
| C | The student demonstrates sound knowledge of content and understanding of course concepts and applies skills and processes in a range of familiar contexts.  In addition, the student demonstrates skills in selecting and integrating information and communicates relevant ideas in an appropriate manner. |
| D | **The student demonstrates a basic knowledge of content and understanding of course concepts and applies skills and processes in some familiar contexts.**  **In addition, the student demonstrates skills in selecting and using information and communicates ideas in a descriptive manner.** |
| E | The student demonstrates an elementary knowledge of content and understanding of course concepts and applies some skills and processes with guidance.  In addition, the student demonstrates elementary skills in recounting information and communicating ideas. |

[Common Grade Scale for Preliminary Courses](https://www.educationstandards.nsw.edu.au/wps/portal/nesa/11-12/Understanding-the-curriculum/awarding-grades/monitoring-grades/common-grade-scale/!ut/p/z1/xVPLcoIwFP0WFywzuQkIuMQ-pD6qbaVKNk6MQbESEIK2_fqibWe6Udpx0ezu85yTnGCGp5gpvouXXMep4psqDpk9s-58ABNovzP2bfDaDx2_6wM1LRtPjg3UIzbxLdIbdlwC3nhIbNp16DBoYnaYJ7RDiEsH4FAHvMfR1ejav6XQb37Nw4njwe_mzzSw8_yfMcNMKJ3pFQ6z_UykSkulDcjydC2FRns5N0DJghtACCLUgFItZF5orhaxWiK9kkiUeR6LclMmBvA9z4-FZc4XsjAgSVWs0_xnSqRJlf0MUSH4Rh5YZCJe4JDTCFpgz5HbciSyWlETtWyToqhpujIiwrVd-a36tCx2_lInB7yad6vbEVYcnJMcehae7GK5x4FK86Ry0tMfJfq1CORChJr1zoXru3XWq_5WvN5umVcZ8OC6V42n_-jALAmCIHHNN_QSDW5MK-zu3tv3iIVeo_EBWSUHjA!!/dz/d5/L2dBISEvZ0FBIS9nQSEh/?urile=wcm%3Apath%3A%2Fpw_content%2Fproject-web%2Fnesa%2F11-12%2FUnderstanding-the-curriculum%2Fawarding-grades%2Fmonitoring-grades%2Fcommon-grade-scale)

# Student-facing rubric

Table 3 – rubric for assessment

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Criteria | Limited | Basic | Sound | High | Outstanding |
| Criteria 1  Describes how systems are used in enterprise and how data is safely and securely collected, stored and manipulated when developing enterprise computing systems.  EC-11-01  EC-11-03 | The student’s documentation of the system and data in the interconnected network device is incomplete or was not provided. | The student identifies ways systems are used in an enterprise system and how to implement procedures and security protocols considering cybersecurity in the interconnected network device. | The student outlines ways systems are used in an enterprise system and ways to implement procedures and security protocols considering cybersecurity in the interconnected network device. | The student describes ways systems are used in a range of enterprise systems and how the use of data in the interconnected network device operates including aspects such as how to implement procedures and security protocols considering cybersecurity. | The student describes ways systems are used in a range of enterprise systems and how the use of data in the interconnected network device operates.  The student explains how the interconnected network device will implement procedures and security protocols considering cybersecurity. |
| Criteria 2  Describes how data is used in enterprise computing systems.  EC-11-04 | The student’s video mentions data used in the interconnected network device. | The student’s video identifies use ofdata in the interconnected network device. | The student’s video outlines use ofdata in the interconnected network device. | The student’s video describes the use of data in the interconnected network device, including aspects such as user feedback and hardware. | The student’s video describes the use of data in the interconnected network device.  The student explains how the digital product will collect user feedback and the performance requirements of hardware. |
| Criteria 3  Explains how innovative technologies have influenced systems and explores the social, ethical and legal implications of the application of enterprise computing systems on the individual, society and the environment.  EC-11-06  EC-11-07 | The student’s video identifies innovation and some social, ethical and legal implications. | The student’s video identifies innovative technologies and social, ethical and legal implications. | The student’s video outlines innovative technologies used in networking and outlines social, ethical and legal implications. | The student’s video describes innovative technologies used in networking and social, ethical and legal implications on the individual, society and the environment. | The student’s video describes innovative technologies used in networking and their influence on enterprise systems.  Relevant social, ethical and legal implications on the individual, society and the environment are explored in the video. |
| Criteria 4  Uses film to document the management and evaluate the development of an enterprise solution.  EC-11-09 | The student attempts to create a film/documentary based on the themes and issues presented. | The student creates an, informative, film/documentary. The film/documentary demonstrates use of production including a range of filming processes and techniques including pre- and post-production. The end product is a film/documentary of an elementary standard. | The student creates a substantial and informative, film/documentary. The film/documentary demonstrates reasonable quality in some aspects of its production including a range of filming processes and techniques including pre- and post-production. The end product is a film/documentary of substantial standard. | The student creates a well-developed, informative, and entertaining film/documentary. The film/documentary demonstrates reasonable quality in every aspect of its production including a range of filming processes and techniques including pre- and post-production. The end product is a film/documentary completed to a high standard. | The student creates an outstanding, informative, and entertaining film/documentary. The film/documentary demonstrates quality in every aspect of its production including a range of filming processes and techniques including pre- and post-production. The end product is a film/documentary of professional standard. |
| Criteria 5  Original use of video footage to document the management and evaluate the development of an enterprise solution.  EC-11-09 | The student attempts to capture relevant and original footage related to the task. | The student provides original video footage that they have captured. The footage directly relates to some of the themes and issues associated with this task. | The student provides a range of original video footage that they have captured. The footage directly relates to the themes and issues associated with this task. | The student provides a wide range of original video footage that they have captured. The footage directly relates to the themes and issues associated with this task. | The student provides an outstanding range of original video footage that they have captured. The footage directly relates to the themes and issues associated with this task. |
| Criteria 6  Students narrated voice to document the management and evaluate the development of an enterprise solution.  EC-11-09 | The student attempts to provide a narration using their own voice. | The student provides a limited narration using their own voice. | The student provides a substantial narration using their own voice. | The student provides a detailed narration of the themes and issues using their own voice. Audio clarity is of a high standard. | The student provides an extensive and detailed narration of the themes and issues using their own voice. Audio clarity is of a professional standard. |

# Student support material

Resources include:

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

# Additional information

This resource has been developed to assist teachers in NSW Department of Education schools to create learning that is contextualised to their classroom. It can be used as a basis for the teacher’s own program, assessment, or scope and sequence, or be used as an example of how the new curriculum could be implemented. The resource should be used with timeframes that are created by the teacher to meet the overall schedules of assessment.

For additional support or advice, contact the TAS curriculum team by emailing [TAS@det.nsw.edu.au](mailto:TAS@det.nsw.edu.au).

## Assessment advice

Assessment is a powerful tool to measure student learning and plan for the next stages in the learning process. Some considerations in using parts of this assessment notification are:

* Consider the skills, knowledge, and understanding students need to complete the task, and see where there are opportunities for them to refine these through ongoing feedback in the learning sequences associated with the assessment task.
* Ensure the language and readability of the task presents an appropriate challenge for the students the task is being used with. Direct, plain English will allow the greatest number of students to access the task independently.
* Marking guidelines should directly reflect the success criteria and outcomes of the task and align with appropriate levels of achievement for the relevant Stage.
* When constructing or adjusting the marking guidelines and/or rubric, try to keep active verbs like ‘do’, ‘say’, ‘make’, or ‘write’ in mind to measure student performance at each level. This will help to avoid subjective language.

## Assessment as a learning opportunity

Assessment can provide ways for students to use formal and informal feedback and self-assessment to help them understand where they are in their learning, where they are going, and how they are going to get there. It is essential that students receive feedback on their performance in the task and have opportunity to clarify and plan the next steps in learning.

* Clear and explicit marking rubrics can support effective self-assessment in relation to the learning intentions and success criteria assisting students to become owners of their own learning. Students can then build their capacity for individual goal setting, which includes students asking questions such as, ‘What do I need to improve?’ and ‘What is my next step?’ ([CESE Growth goals setting – what works best in practice](https://education.nsw.gov.au/about-us/educational-data/cese/publications/practical-guides-for-educators/growth-goal-setting)).
* Greater learning gains may be made when teachers provide explicit descriptive feedback to students in a timely manner. This feedback supports students in forming their learning goals as well as helping the teacher to plan for the next iteration of the teaching and learning cycle.

### Differentiation advice

Differentiated learning can be enabled by differentiating the assessment approach to content, process, and product. Reasonable adjustments of assessment for students with disability is a legal requirement under the [*Disability Standards for Education 2005* (Cth)](https://www.dese.gov.au/disability-standards-education-2005). For students with a disability, adjustment in assessment tasks should be made through the [Collaborative curriculum planning](https://educationstandards.nsw.edu.au/wps/portal/nesa/k-10/diversity-in-learning/special-education/collaborative-curriculum-planning) process. For more information on differentiation, go to [Differentiating learning](https://education.nsw.gov.au/teaching-and-learning/professional-learning/teacher-quality-and-accreditation/strong-start-great-teachers/refining-practice/differentiating-learning) and [Differentiation](https://education.nsw.gov.au/campaigns/inclusive-practice-hub/primary-school/teaching-strategies/differentiation). When using this resource, teachers can use a range of [adjustments](https://education.nsw.gov.au/teaching-and-learning/disability-learning-and-support/personalised-support-for-learning/adjustments-to-teaching-and-learning) to ensure a personalised approach to student learning.

* Some common adjustments are available through the [inclusive practice hub assessment and reporting](https://education.nsw.gov.au/campaigns/inclusive-practice-hub/all-resources/secondary-resources/other-pdf-resources/nesa-assessment-and-reporting) site.
* The [HPGE Differentiation adjustment tool](https://education.nsw.gov.au/teaching-and-learning/high-potential-and-gifted-education/supporting-educators/implement/differentiation-adjustment-strategies) and [Differentiation Package](https://schoolsnsw.sharepoint.com/sites/HPGEHub/SitePages/Home.aspx#first-time-access-to-hpge-resources) can assist teachers to decide how to provide extension and additional challenge for High Potential and Gifted (HPG) students.

The steps below may be useful to consider when creating access opportunities for all students:

* remove unnecessary words/images
* simplify any tricky words or make a glossary of subject specific words
* reduce the lexical density of the steps and use student friendly language
* chunk large passages of reading or offer alternate ways of representing the information, such as a visual
* make the task description a checklist with numbered steps
* limit options and/or reduce the number of choices students need to make independently.

## 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).

**Alignment to system priorities and/or needs:** [School Excellence Policy](https://education.nsw.gov.au/policy-library/policies/pd-2016-0468), [School Success Model.](https://education.nsw.gov.au/public-schools/school-success-model/school-success-model-explained)

**Alignment to the School Excellence Framework**: this resource supports the [School Excellence Framework](https://education.nsw.gov.au/policy-library/policies/pd-2016-0468) element of assessment (formative assessment, summative assessment, student engagement).

**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) 5.1.2, 5.4.2.

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

**NSW Syllabus**: Enterprise Computing 11-12

**Syllabus outcomes**: EC-11-01, EC-11-03, EC-11-04, EC-11-06, EC-11-07 and EC-11-09

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**Related resources**: further resources to support Enterprise Computing 11–12 can be found on the [TAS curriculum page](https://education.nsw.gov.au/teaching-and-learning/curriculum/tas).

**Professional learning**: relevant professional learning is available through [HSC Professional Learning](https://education.nsw.gov.au/teaching-and-learning/professional-learning/hsc-pl) or on the [TAS curriculum page](https://education.nsw.gov.au/teaching-and-learning/curriculum/tas).

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# Evidence base

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