

Australian Curriculum: Digital Technologies— Years 7 to 8 Band plan-2025

Band Description.

By the end of Year 8 students should have had the opportunity to apply computational thinking by defining and decomposing real-world problems, creating user experiences, designing and modifying algorithms, and implementing them in a general-purpose programming language. This involves students practising problem decomposition, using approaches such as divide and conquer to more clearly understand a problem by describing its component parts. Students represent and communicate their algorithmic solutions using flowcharts and pseudocode. Students check their solutions meet the specifications by testing and debugging their algorithms before and during implementation. They develop a deeper understanding of abstraction by explaining how and why digital systems represent data as whole numbers, which are then represented in binary.

Students build on their skills from Mathematics (Statistics) in acquiring and interpreting data. In Digital Technologies, students continue to advance these skills and are also given opportunities to validate the data they acquire to ensure it is accurate and consistent. They collect and transform many types of data from a wide range of sources. Students model structured data in meaningful ways using spreadsheets and single-table databases, and analyse and visualise the data to extract meaning from it.

They apply design thinking by using divergent techniques, such as mind mapping, role-play and using graphic organisers, to generate design ideas for user experiences and solution designs. Students review these ideas against design criteria and created user stories throughout their implementation as general-purpose programming by assessing them against current and future needs. They extend the use of these design criteria and user stories to evaluate the future impact of existing solutions.

Students apply systems thinking by exploring the connections between hardware capabilities and tasks users want to perform. They investigate how data is transmitted via wired and wireless networks and explain the need for encryption to protect and secure data. Students use an increasing range of the features of digital tools to improve their efficiency and the consistency of the content they create, locate and communicate. They plan and manage projects individually and collaboratively, improving their control over the quality of their content. Students investigate personal security controls, including multi-factor authentication, to protect their data if passwords are compromised, and they understand the impact of phishing and other cyber security threats on people and data.

In Digital Technologies, students should have frequent opportunities for authentic learning by making key connections with other learning areas.

This subject is supported by Virtual Reality Modules; Cyber Security and Networks. Immersive Pedagogy supporting documentation is available as part of these modules.

| CURRICULUM | | | YEAR 7 | YEAR 8 | | |
|--|--------------|--|---------------------|--|---|--|
| | | TERM 1 - 4 | | SEMESTER 1 & 2 | | |
| | | Unit 1 | | Unit 1 | Unit 2 | |
| Unit name | | | Digital Certificate | Digital Certificate | Code It! | |
| Unit description Should align with and reflect the Band Description. | | This course is designed to introduce students to the fundamental concepts and skills necessary to navigate and create in the digital world. Over the 10 weeks, students will engage in a variety of hands-on activities and projects that will enhance their understanding and application of digital technologies. Students are asses via a folio of tasks. | | This course is designed to build on the fundamental concepts and skills experienced in Year 7. Over the 10 weeks, students will engage in a variety of hands-on activities and projects that will advance their understanding and application of digital technologies. Students are assessed via a Digital Technologies PowerPoint and Competencies checklist. | Students create, test and evaluate a digital solution based on identified design criteria, user stories and possible future impacts in the area of sustainability. They decompose a real-world problem into logical parts and represent their algorithmic solutions using flowcharts and pseudocode. Students use design thinking while iteratively implementing their designs in a general-purpose programming language. They plan and manage the project while individually managing their personal security controls and their digital footprint. Students are assessed via a multimodal project, involving developing and modifying digital solutions, evaluating alternatives, designing algorithms and using digital tools efficiently. | |
| ASSESSMENT | | YEAR 7 | | YE | YEAR 8 | |
| | | | Term 1 - 4 | Term 1 & 3 | Term 2 & 4 | |
| | | | AT1 | AT1 | AT2 | |
| | Technique | Project | | Project | Project | |
| | Type of text | Folio | | Folio | Digital | |
| Range and | Mode | Multimodal | | Multimodal | Multimodal | |
| balance of summative assessment conventions | Conditions | • Individual | | • Individual | Individual or in pairs 2–4 A3 pages or equivalent digital media pages that may include annotated graphical representations digital solution as negotiated | |
| Aspects of the achievement standard | | | | | | |
| develop and modify creative digital solutions, decompose real-world problems, and evaluate alternative solutions against user stories and design criteria. | | PPS Investigating & defining and Evaluating | ✓ | | \checkmark | |
| acquire, interpret and model data with spreadsheets and represent data with integers and binary. | | K & U Data representation AND PPS Acquiring, managing and analysing data. | ✓ | ✓ | | |
| design and trace algorithms and implement them in a general- purpose programming language. | | PPS Generating & designing, Producing & implementing | ✓ | \checkmark | \checkmark | |
| select appropriate hardware for particular tasks, explain how data is transmitted and secured in networks, and identify cyber security threats. | | K & U Digital Systems AND PPS Privacy & security | ~ | \checkmark | | |

| select and use a range of digital tools efficiently and responsibly to create, locate and share content; and to plan, collaborate on and manage projects. | PPS Collaborating & managing. | \checkmark | \checkmark |
|---|-------------------------------------|--------------|--------------|
| manage their digital footprint. | PPS Privacy & security | | \checkmark |

<mark>Year 7</mark> Year 8

indicates opportunities that summative assessments provide for students to demonstrate evidence against aspects of the achievement standard