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| Years 7–8 band Digital Technologies (Esports Context) Curriculum and assessment plan  [Insert school name, implementation year] |

| Level description | | | | Context and cohort considerations (if applicable) |
| --- | --- | --- | --- | --- |
| 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. | | | | Describe the context and cohort.  Consider the following to make informed professional decisions during the planning process:   * + relevant student data and information, e.g. achievement data   + available resources, e.g. timetabling   + school and sector priorities.   [Insert context and cohort considerations] |
| Unit 1 — Esports Network Security | Unit 2 — Esports Tournament Data | Unit 3 — Esports Website UI Design | Unit 4 — Esports Game Coding | |
| Duration: 1 Term – 10 Weeks | Duration: 1 Term – 10 Weeks | Duration: 1 Term – 10 Weeks | Duration: 1 Term – 10 Weeks | |
| In this unit, students will be introduced to the world of Esports through the lens of a network engineer. Students will be exposed to the wide-ranging careers in the industry and then the unit will focus on the Information Technology discipline and specifically network architecture and security. They will explore computer and network hardware required in esports. Students will explore various network topologies and configurations and investigate the differences between each. They will identify general cyber-security threats and then focus on common threats to esports tournaments. | In this unit, students will be able to develop an understanding of spreadsheets and data collection, visualisation and analysis. They will do this through the lens of Esports tournaments and recording player tournament data. Students will also explore how computers represent data in integers and binary and will use binary, hexadecimal and RGB representations to create and visualise data in creative ways. Students will learn Excel skills including conditional formatting, long-form IF statements and chart creation. | In this unit, students will learn about User Experience design and User Interface design decisions. They will evaluate designs against criteria and user stories and explore a range of design decisions based on user stories. Students will work collaboratively to plan, design and create digital solutions to website design problems. They will explore esports through the social media/public relations lens and create personal esports team website designs, taking account of their own digital footprint. | In this unit, students will be introduced to Javascript as a general-purpose programming language through the Esports lens of a game programmer; the people behind the curtain who produce the Esports games we know and love. They will use Javascript through Code.org’s online game editor to create some basic gameplay loops. Students will understand programming principles such as conditionals, loops and functions. They will trace algorithms before implementing them in games through teacher-led programming challenges. In the assessment, an exam, they will be given algorithms to trace and some coding snippets to modify and build-on. | |

|  | Unit 1 | | Unit 2 | | Unit 3 | | Unit 4 | |
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|  | Assessment — Network Risk Assessment | Timing | Assessment — Esports Tournament Database | Timing | Assessment — Esports Player Websites | Timing | Assessment — Javascript Game Coding | Timing |
| Assessment | Through the assessment, students will produce a network risk assessment document, detailing the computer and network hardware required for a PC Rocket League tournament and exploring the data transmission requirements of the tournament. They will also produce a threat-assessment and detail methods of preventing cyber-security attacks on the tournament.   * Investigation * Multimodal * 4 Weeks – Draft feedback available | Week 6 - 9 | Through the assessment, students will produce an Excel document to be used to record Mario Kart esports data. They will use features of Excel such as conditional formatting and IF statements to visualise the data in creative ways.   * Project * ICT * 5 Weeks – Draft feedback available | Week 5 - 9 | Through the assessment, students will work in groups to evaluate a provided esports player profile website against a user story and their own criteria. As a group, they will need to design and develop an alternative website design for the provided player profile. Students will then work as a group to develop esports player profile website designs for each team member, taking account of their digital footprint. They will use Adobe or Canva products to develop their designs.   * Project * Multimodal * 6 weeks – Draft feedback available | Week 4 - 9 | Students will sit an exam that requires them to trace algorithms to answer questions. They will also modify Javascript code to meet needs and debug code blocks to fix problems.   * Examination * Written * 60 minutes – short response | Week 8 |
| Achievement standard | By the end of Year 8 students develop and modify creative digital solutions, decompose real-world problems, and evaluate alternative solutions against user stories and design criteria. Students acquire, interpret and model data with spreadsheets and represent data with integers and binary. They design and trace algorithms and implement them in a general-purpose programming language. Students select appropriate hardware for particular tasks, explain how data is transmitted and secured in networks, and identify cyber security threats. They 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. Students manage their digital footprint. | | By the end of Year 8 students develop and modify creative digital solutions, decompose real-world problems, and evaluate alternative solutions against user stories and design criteria. Students acquire, interpret and model data with spreadsheets and represent data with integers and binary. They design and trace algorithms and implement them in a general-purpose programming language. Students select appropriate hardware for particular tasks, explain how data is transmitted and secured in networks, and identify cyber security threats. They 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. Students manage their digital footprint. | | By the end of Year 8 students develop and modify creative digital solutions, decompose real-world problems, and evaluate alternative solutions against user stories and design criteria. Students acquire, interpret and model data with spreadsheets and represent data with integers and binary. They design and trace algorithms and implement them in a general-purpose programming language. Students select appropriate hardware for particular tasks, explain how data is transmitted and secured in networks, and identify cyber security threats. They 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.. Students manage their digital footprint. | | By the end of Year 8 students develop and modify creative digital solutions, decompose real-world problems, and evaluate alternative solutions against user stories and design criteria. Students acquire, interpret and model data with spreadsheets and represent data with integers and binary. They design and trace algorithms and implement them in a general-purpose programming language. Students select appropriate hardware for particular tasks, explain how data is transmitted and secured in networks, and identify cyber security threats. They 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. Students manage their digital footprint. | |
| Moderation | Calibration: Week 1 of Term  Consensus: Week 5 of Term  Confirmation and review: Week 9 – Week 10 Term | | Calibration: Week 1 of Term  Consensus: Week 4 of Term  Confirmation and review: Week 9 – Week 10 Term | | Calibration: Week 1 of Term  Consensus: Week 3 of Term  Confirmation and review: Week 9 – Week 10 Term | | Calibration: Week 1 of Term  Consensus: Week 6 of Term  Confirmation and review: Week 8 – Week 10 Term | |

| Content descriptions | Units | | | | Content descriptions | Units | | | |
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| Knowledge and understanding | 1 | 2 | 3 | 4 | Processes and production skills | 1 | 2 | 3 | 4 |
| **Digital systems**  explain how hardware specifications affect performance and select appropriate hardware for particular tasks and workloads  AC9TDI8K01 |  |  |  |  | **Acquiring, managing and analysing data**  acquire, store and validate data from a range of sources using software, including spreadsheets and databases  AC9TDI8P01 |  |  |  |  |
| investigate how data is transmitted and secured in wired and wireless networks including the internet  AC9TDI8K02 |  |  |  |  | analyse and visualise data using a range of software, including spreadsheets and databases, to draw conclusions and make predictions by identifying trends  AC9TDI8P02 |  |  |  |  |
| **Data representation**  investigate how digital systems represent text, image and audio data using integers  AC9TDI8K03 |  |  |  |  | model and query the attributes of objects and events using structured data  AC9TDI8P03 |  |  |  |  |
| explain how and why digital systems represent integers in binary  AC9TDI8K04 |  |  |  |  | **Investigating and defining**  define and decompose real world problems with design criteria and by creating user stories  AC9TDI8P04 |  |  |  |  |
|  | | | | | **Generating and designing**  design algorithms involving nested control structures and represent them using flowcharts and pseudocode  AC9TDI8P05 |  |  |  |  |
| trace algorithms to predict output for a given input and to identify errors  AC9TDI8P06 |  |  |  |  |
| design the user experience of a digital system  AC9TDI8P07 |  |  |  |  |
| generate, modify, communicate and evaluate alternative designs  AC9TDI8P08 |  |  |  |  |
| **Producing and implementing**  Implement, modify and debug programs involving control structures and functions in a general purpose programming language  AC9TDI8P09 |  |  |  |  |
| **Evaluating**  evaluate existing and student solutions against the design criteria, user stories and possible future impact  AC9TDI8P10 |  |  |  |  |
| **Collaborating and managing**  select and use a range of digital tools efficiently, including unfamiliar features, to create, locate and communicate content, consistently applying common conventions  AC9TDI8P11 |  |  |  |  |
| select and use a range of digital tools efficiently and responsibly to share content online, and plan and manage individual and collaborative agile projects  AC9TDI8P12 |  |  |  |  |
| **Privacy and security**  explain how multi factor authentication protects an account when the password is compromised and identify phishing and other cyber security threats  AC9TDI8P13 |  |  |  |  |
| investigate and manage the digital footprint existing systems and student solutions collect and assess if the data is essential to their purpose  AC9TDI8P14 |  |  |  |  |

| General capabilities | Units | | | |  | Cross-curriculum priorities | Units | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 |  |  | 1 | 2 | 3 | 4 |
| Critical and creative thinking |  |  |  |  |  | Aboriginal and Torres Strait Islander histories and cultures |  |  |  |  |
| Digital literacy |  |  |  |  |  | Asia and Australia’s engagement with Asia |  |  |  |  |
| Ethical understanding |  |  |  |  |  | Sustainability |  |  |  |  |
| Intercultural understanding |  |  |  |  |
| Literacy |  |  |  |  |
| Numeracy |  |  |  |  |
| Personal and social capability |  |  |  |  |

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