Australian Curriculum: Technologies — Year 9
Digital Technologies
Band plan-2023

CURRICULUM	Year 9			
	Semester 1		Semester 2	
	Term 1	Term 2	Term 3	Term 4
Unit name	Game On!	Artificial and Robot Intelligence	Data, Data, Data	Exploring JavaScript
Unit description	Students will create a prototype game to solve an identified problem. They will apply computational thinking skills including abstraction, specification to address complex problems, design a user experience of a solution for a platform game, using storyboards and mock-ups. They will use diagrams (flowcharts), structured English (pseudocode) to design algorithms and validate them through tracing and test cases. Students will apply object-oriented programming language to implement interact features and investigate the economic success for their digital solution considering safety and sustainability.	Students will be introduced to the world of robotics, intelligence, the social aspects of innovation and sustainability, the function requirements and the programming involved moving a robot safely within its surroundings. Students will write algorithms that explores a wide range of sensors, electronic components, and the concept of AI (*Artificial Intelligence*) using the PID control process. (*Proportional, Integral, Derivative*), while using a robotic device to perform a 'rescue' challenge.	Students will apply understandings about data and develop skills of data analysis, data visualisation and image compression for data transmission and storage. They will use databasing tools to enable them to manage large amounts of data to get the most value from it, explore how data can be encoded and represented visually as channels of information, as well as considering both the appearance and functionality of the information they are presenting.	Students will use JavaScript mark-up language to create a portfolio based a series of tasks designed as an introduction to concepts of programming. They will apply computational thinking skills including abstraction and specification to address the set tasks. They will use diagrams (flowcharts), structured English (pseudocode) to design algorithms and validate them through tracing and test cases.

ASSESSMENT	Year 9				
	Semester 1		Semester 2		
	Game On! –AT1	Intelligent processing – AT2	Data management project -AT3	Data management Exam -AT4	Exploring JavaScript – AT5

Range and balance of summative assessment conventions						
	Technique	Project	Project	Project	Exam	Project
	Type of Text	Digital Multimodal & ICT Digital Solution	Digital Multimodal & ICT Digital Solution	Folio Task Book	Multiple Choice, Short Response	Digital Multimodal & ICT Digital Solution
	Mode	Written & Practical	Written and Practical	Written	Written	Digital and Practical
	Conditions	• Written responses, including graphical representations 300–400 words • Digital solution (GameMaker) • In class • Some teacher and peer assistance • 5 Weeks	• Written responses, including graphical representations 300–400 words • Multimodal PowerPoint with video recording 1-2 mins • 5 weeks • Individual and group work • In class	• Written responses including graphical representations 300–400 words • Ongoing • In class & home work	• Exam conditions • 70 minutes • Closed Book	• Digital solution (JavaScript) • Multimodal PowerPoint with video recording 1-2 mins • In class • Some teacher and peer assistance • 7 Weeks
Aspects of the achievement standard						
explain the control and management of networked digital systems and the security implications of the interaction between hardware, software and users					✓	
explain simple data compression, and why content data are separated from presentation					✓	✓
plan and manage digital projects using an iterative approach		✓	✓	✓		
define and decompose complex problems in terms of functional and non-functional requirements				✓		✓
design and evaluate user experiences and algorithms		✓		✓		✓
design and implement modular programs, including an object-oriented program, using algorithms and data structures involving modular functions that reflect the relationships of real-world data and data entities		✓	✓	✓		✓

take account of privacy and security requirements when selecting and validating data				✓	
test and predict results and implement digital solutions	✓	✓	✓	✓	✓
evaluate information systems and their solutions in terms of risk, sustainability and potential for innovation and enterprise				✓	
share and collaborate online, establishing protocols for the use, transmission and maintenance of data and projects		✓			

Term 1 Term 2 Term 3 Term 4

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