Foreword

This document serves as a guideline only. Teachers are encouraged to explore Project lesson plans, platform content and learning journals themselves to figure out how to integrate each Project into their curriculum units. Although Projects offer a complete experience with their own self-contained content, we recommend that teachers look for areas where they can incorporate additional content that makes use of their own unique experience, knowledge and classroom learning objectives. If your curriculum is not yet included in one of these documents, that does not mean that this Project will not be suitable for your class. We recommend all teachers explore the Project content themselves before deciding how to integrate it into their curriculum as they know the requirements of their students and the topics they will find engaging better than anyone.

Table Key

The contents of this Project are well suited to delivering this aspect of the curriculum. As a teacher, you are free to skip over or de-emphasise content if this part of the curriculum is not something that you want to focus on.	**The contents of this Project can deliver part of this aspect of the curriculum.** This Project may require additional activities or discussions from the teacher to highlight key concepts of this aspect of the curriculum.	**The contents of this Project do not explicitly cover this aspect of the curriculum.** You can still use the simulations as a base for delivering your own content if you want to incorporate this aspect of the curriculum into the Project.

Australia - ACARA National Curriculum

Digital Technologies: Sequence of content F-10

Strand: Knowledge and understanding					
	F-2	3-4	5-6	7-8	9-10 (Elective subject)
Digital systems	Recognise and explore digital systems (hardware and software components) for a purpose (ACTDIK001)	Identify and explore a range of digital systems with peripheral devices for different purposes, and transmit different types of data (ACTDIK007)	Examine the main components of common digital systems and how they may connect together to form networks to transmit data (ACTDIK014)	Investigate how data is transmitted and secured in wired, wireless and mobile networks, and how the specifications affect performance (ACTDIK023)	Investigate the role of hardware and software in managing, controlling and securing the movement of and access to data in networked digital systems (ACTDIK034)
Representation of data	Recognise and explore patterns in data and represent data as pictures, symbols and diagrams (ACTDIK002)	Recognise different types of data and explore how the same data can be represented in different ways (ACTDIK008)	Examine how whole numbers are used to represent all data in digital systems (ACTDIK015)	Investigate how digital systems represent text, image and audio data in binary (ACTDIK024)	Analyse simple compression of data and how content data are separated from presentation (ACTDIK035)

Strand: Processes and production skills					
	F-2	3-4	5-6	7-8	9-10 (Elective subject)
Collecting, managing and analysing	Collect, explore and sort data, and use digital systems to present the data creatively	Collect, access and present different types of data using simple software to create information and	Acquire, store and validate different types of data, and use a range of software to interpret and visualise data	Acquire data from a range of sources and evaluate authenticity, accuracy and timeliness (ACTDIP025)	Develop techniques for acquiring, storing and validating quantitative and qualitative data from a

data	(ACTDIP003)	solve problems (ACTDIP009)	to create information (ACTDIP016)	Analyse and visualise data using a range of software to create information, and use structured data to model objects or events (ACTDIP026)	range of sources, considering privacy and security requirements (ACTDIP036) Analyse and visualise data to create information and address complex problems, and model processes, entities and their relationships using structured data (ACTDIP037)
Creating digital solutions by investigating and defining	Follow, describe and represent a sequence of steps and decisions (algorithms) needed to solve simple problems (ACTDIP004)	Define simple problems, and describe and follow a sequence of steps and decisions (algorithms) needed to solve them (ACTDIP010)	Define problems in terms of data and functional requirements drawing on previously solved problems (ACTDIP017)	Define and decompose realworld problems taking into account functional requirements and economic, environmental, social, technical and usability constraints (ACTDIP027)	Define and decompose realworld problems precisely, taking into account functional and non-functional requirements and including interviewing stakeholders to identify needs (ACTDIP038)
Creating digital solutions by generating and designing	n/a	n/a	Design a user interface for a digital system (ACTDIP018)	Design the user experience of a digital system, generating, evaluating and communicating alternative designs (ACTDIP028)	Design the user experience of a digital system by evaluating alternative designs against criteria including functionality, accessibility, usability, and aesthetics (ACTDIP039)
	n/a	n/a	Design, modify and follow simple algorithms involving sequences of steps, branching, and iteration (repetition) (ACTDIP019)	Design algorithms represented diagrammatically and in English, and trace algorithms to predict	Design algorithms represented diagrammatically and in structured English and validate algorithms and

				output for a given input and to identify errors (ACTDIP029)	programs through tracing and test cases (ACTDIP040)
Creating digital solutions by producing and implementing	n/a	Implement simple digital solutions as visual programs with algorithms involving branching (decisions) and user input (ACTDIP011)	Implement digital solutions as simple visual programs involving branching, iteration (repetition), and user input (ACTDIP020)	Implement and modify programs with user interfaces involving branching, iteration and functions in a general-purpose programming language (ACTDIP030)	Implement modular programs, applying selected algorithms and data structures including using an object-oriented programming language (ACTDIP041)
Creating digital solutions by evaluating	Explore how people safely use common information systems to meet information, communication and recreation needs (ACTDIP005)	Explain how student solutions and existing information systems meet common personal, school or community needs (ACTDIP012)	Explain how student solutions and existing information systems are sustainable and meet current and future local community needs (ACTDIP021)	Evaluate how student solutions and existing information systems meet needs, are innovative, and take account of future risks and sustainability (ACTDIP031)	Evaluate critically how student solutions and existing information systems and policies, take account of future risks and sustainability and provide opportunities for innovation and enterprise (ACTDIP042)
Creating digital solutions by collaborating and managing	Create and organise ideas and information using information systems independently and with others, and share these with known people in safe online environments (ACTDIP006)	Plan, create and communicate ideas and information independently and with others, applying agreed ethical and social protocols (ACTDIP013)	Plan, create and communicate ideas and information, including collaboratively online, applying agreed ethical, social and technical protocols (ACTDIP022)	Plan and manage projects that create and communicate ideas and information collaboratively online, taking safety and social contexts into account (ACTDIP032)	Create interactive solutions for sharing ideas and information online, taking into account safety, social contexts and legal responsibilities (ACTDIP043) Plan and manage projects using an iterative and collaborative approach, identifying risks and considering safety and sustainability (ACTDIP044)