Digital Technologies Foundation to Year 10 scope and sequence

Strand		Foundation to Year 2	Years 3 and 4	Years 5 and 6	Years 7 and 8	Years 9 and 10 (Elective subject)
Digital Technologies knowledge and understanding	***Digital systems***	Identify, use and explore digital systems (hardware and software components) for a purpose (ACTDIK001)	Explore and use a range of digital systems with peripheral devices for different purposes, and transmit different types of data (ACTDIK007)	Investigate the main components of common digital systems, their basic functions and interactions, and how such digital systems may connect together to form networks to transmit data (ACTDIK014)	Investigate how data are transmitted and secured in wired, wireless and mobile networks, and how the specifications of hardware components impact on network activities (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)	Investigate how digital systems use whole numbers as a basis for representing all types of data (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)
Digital Technologies processes and production skills	***Collecting , managing and analysing data***	Collect, explore and sort data, and use digital systems to present the data creatively (ACTDIP003)	Collect, access and present different types of data using simple software to create information and solve problems (ACTDIP009)	Acquire, store and validate different types of data, and use a range of commonly available software to interpret and visualise data in context to create information (ACTDIP016)	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 range of sources, considering privacy and security requirements (ACTDIP036)
					Analyse and visualise data using a range of software to create information, and use structured data to model objects or events (ACTDIP026)	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:					
	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, and identify features similar to previously solved problems (ACTDIP017)	Define and decompose real-world problems taking into account functional requirements and economic, environmental, social, technical and usability constraints (ACTDIP027)	Precisely define and decompose real-world problems, taking into account functional and non-functional requirements and including interviewing stakeholders to identify needs (ACTDIP038)

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	Designing			Design a user interface for a digital system, generating and considering alternative designs (ACTDIP018)	Design the user experience of a digital system, generating, evaluating and communicating alternative designs (ACTDIP028)	Design the user experience of a digital system, evaluating alternative designs against criteria including functionality, accessibility, usability, and aesthetics (ACTDIP039)
				Design, modify and follow simple algorithms represented diagrammatically and in English involving sequences of steps, branching, and iteration (repetition) (ACTDIP019)	Design algorithms represented diagrammatically and in English, and trace algorithms to predict output for a given input and to identify errors (ACTDIP029)	Design algorithms represented diagrammatically and in structured English and validate algorithms and programs through tracing and test cases (ACTDIP040)
	Implementing		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)
	Evaluating	Explore how people safely use common information systems to meet information, communication and recreation needs (ACTDIP005)	Explain how developed solutions and existing information systems meet common personal, school or community needs, and envisage new ways of using them (ACTDIP012)	Explain how developed solutions and existing information systems are sustainable and meet local community needs, considering opportunities and consequences for future applications (ACTDIP021)	Evaluate how well developed solutions and existing information systems meet needs, are innovative, and take account of future risks and sustainability (ACTDIP031)	Critically evaluate how well developed solutions and existing information systems and policies, take account of future risks and sustainability and provide opportunities for innovation and enterprise (ACTDIP042)
	Collaborating and managing	Work with others to create and organise ideas and information using information systems, and share these with known people in safe online environments (ACTDIP006)	Work with others to plan the creation and communication of ideas and information safely, applying agreed ethical and social protocols (ACTDIP013)	Manage the creation and communication of ideas and information including online collaborative projects, applying agreed ethical, social and technical protocols (ACTDIP022)	Create and communicate interactive ideas and information collaboratively online, taking into account social contexts (ACTDIP032)	Create interactive solutions for sharing ideas and information online, taking into account social contexts and legal responsibilities (ACTDIP043)
					Plan and manage projects, including tasks, time and other resources required, considering safety and sustainability (ACTDIP033)	Plan and manage projects using an iterative and collaborative approach, identifying risks and considering safety and sustainability (ACTDIP044)