

## 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)  |
|--|---|---|--|---|--|
| <b>Digital Technologies</b><br>Knowledge and understanding     | 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)                          |
|  | 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)  |
|  | 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)            |
| <b>Digital Technologies</b><br>Processes and production skills | 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)  | 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)                   |
| <b>Digital Technologies</b><br>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) |
| <b>Digital Technologies</b><br>Creating digital solutions by:  | 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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|-----------------------------------|--|---|---|--|---|
| <i>Designing</i>                  |  |   | 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)                                       |
|                                   |  | Implement simple digital solutions as visual programs with algorithms involving branching (decisions), and user input (ACTDIP011)                                 | 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)  |
|                                   | 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) |
| <i>Implementing</i>               |  |   | 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)   |
|                                   | 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)                 |   | 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)   |
| <i>Evaluating</i>                 |  |   |   |  |   |
|                                   |  |   |   |  |   |
| <i>Collaborating and managing</i> |  |   |   |  |   |
|                                   |  |   |   |  |   |