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|  | **STRAND** | Knowledge and understanding | Processes and production skills*Creating Digital Solutions by:* |
|  |  | Digital Systems | Representationof data | Collecting, managing and analysing data | Investigating and defining | Generating and designing | Producing andimplementing | Evaluating | Collaborating and managing |
|  | **Content Description** | Examine the main components of common digital systems and how they may connect together to form networks to transmit data (ACTDIK014 ) | Examine how whole numbers are used to represent all data in digital systems (ACTDIK015 ) | Acquire, store and validate different types of data, and use a range of software to interpret and visualise data to create information (ACTDIP016) | Define problems in terms of data and functional requirements drawing on previously solved problems (ACTDIP017 ) | Design a user interface for a digital system (ACTDIP018) | Design, modify and follow simple algorithms involving sequences of steps, branching, and iteration (repetition) (ACTDIP019) | Implement digital solutions as simple visual programs involving branching, iteration (repetition), and user input (ACTDIP020) | Explain how student solutions and existing information systems are sustainable and meet current and future local community needs (ACTDIP021) | Plan, create and communicate ideas and information, including collaboratively online, applying agreed ethical, social and technical protocols (ACTDIP022 ) |
| **Sequence of Lessons / Unit** | **Approx. time rq’d** | **Year** | CD  | Achievement standard # | CD  | Achievement standard # | CD  | Achievement standard # | CD  | Achievement standard # | CD  | Achievement standard # | CD  | Achievement standard # | CD  | Achievement standard # | CD  | Achievement standard # | CD  | Achievement standard # |
| Data and information  | 6 | 5 |  | 1 |  |  |  |  |  | 3 |  |  |  |  |  |  |  |  |  |  |
| Connecting digital components | 4 | 6 |  | 1 |  |  |  | 3 |  | 3 |  |  |  |  |  |  |  |  |  |  |
| Binary numbers | 2 | 5 |  |  |  | 2 |  | 4 |  |  |  |  |  |  |  |  |  |  |  |  |
| Representing images using binary | 4 | 6 |  |  |  | 2 |  | 4 |  |  |  |  |  |  |  |  |  |  |  |  |
| Problem-solving processes | 16 | 5 |  |  |  |  |  |  |  | 3 |  |  |  |  |  | 4 |  | 5 |  |  |
| Creating a digital game | 20 | 6 |  |  |  |  |  |  |  | 3 |  | 4 |  | 4 |  | 4 |  |  |  |  |
| Digital citizenship | 2 | 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 6 |
| Collaborative project | 6 | 6 |  | 1 |  |  |  |  |  | 3 |  |  |  |  |  |  |  | 5 |  | 6 |

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| **Levels 3 and 4 Achievement Standard** | **Levels 5 and 6 Achievement Standard** The numbering of the Achievement Standards below is reflected in the grid above to show coverage across the 8 units.  | **Levels 7 and 8 Achievement Standard** |
| By the end of Year 4* Students describe how a range of digital systems (hardware and software) and their peripheral devices can be used for different purposes.
* They explain how the same data sets can be represented in different ways.
* Students define simple problems, design and implement digital solutions using algorithms that involve decision-making and user input.
* They explain how the solutions meet their purposes.
* They collect and manipulate different data when creating information and digital solutions.
* They safely use and manage information systems for identified needs using agreed protocols and describe how information systems are used.
 | By the end of Year 6:* Students explain the fundamentals of digital system components (hardware, software and networks) and how digital systems are connected to form networks. (1)
* They explain how digital systems use whole numbers as a basis for representing a variety of data types. (2)
* Students define problems in terms of data and functional requirements and design solutions by developing algorithms to address the problems. (3)
* They incorporate decision-making, repetition and user interface design into their designs and implement their digital solutions, including a visual program. (4)
* They explain how information systems and their solutions meet needs and consider sustainability. (5)
* Students manage the creation and communication of ideas and information in collaborative digital projects using validated data and agreed protocols. (6)
 | By the end of Year 8* students distinguish between different types of networks and defined purposes.
* They explain how text, image and audio data can be represented, secured and presented in digital systems.
* Students plan and manage digital projects to create interactive information.
* They define and decompose problems in terms of functional requirements and constraints.
* Students design user experiences and algorithms incorporating branching and iterations, and test, modify and implement digital solutions.
* They evaluate information systems and their solutions in terms of meeting needs, innovation and sustainability.
* They analyse and evaluate data from a range of sources to model and create solutions.
* They use appropriate protocols when communicating and collaborating online.
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**Suggested weighting of topics**

**Year 5**

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| Binary numbers | Digital citizenship | Data and information | Problem-solving processes |

**Year 6**

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| Connecting digital components | Representing images using binary | Collaborative project | Creating a digital game |