Level description: Years 5 and 6

By the end of Year 6 students should have had the opportunity to apply computational thinking by creating digital solutions that involve defining problems, designing and modifying algorithms , and implementing them as visual programs . Students practise different strategies to develop their abstract thinking, such as thinking out aloud to simplify problems, which is needed when defining them. They represent algorithms involving branching and iteration and implement them as visual programs that include variables and respond to input . Students think in a more abstract way, exploring how on and off states and whole numbers can be used to represent data .

They use design thinking techniques to generate multiple ideas about the design of solutions and how people interact with them. Based on given or co-developed design criteria and student-generated user stories , they select, and where appropriate modify, their preferred design ideas for further development. They extend the use of design criteria by evaluating their own and existing solutions, considering the impact of these solutions on their community. Through Digital Technologies and Mathematics (Statistics), students develop confidence and competencies in using digital systems to create displays of data , such as visualisations, which assist in interpreting data sets.

Students apply systems thinking when investigating the functions and purpose of each component in a digital system and their interactions with others. They examine how data is broken up and sent through networks. Through frequent practice when completing tasks and projects, students develop competence and confidence in creating content that applies agreed conventions , such as heading hierarchies and labelling of charts, and they use a consistent file-naming system. When working in groups, students explore different ways of working collaboratively, such as agreeing on how tasks should be allocated and content shared. Students protect data stored in their personal accounts by creating separate passphrases for each account and explain how their personal data forms their permanent digital footprint .

In Digital Technologies, students should have frequent opportunities for authentic learning by making key connections with other learning areas.

Achievement standard: Years 5 and 6

By the end of Year 6 students explain how people design products, services and environments to meet the needs of communities, including sustainability. For each of the 3 prescribed technologies contexts students explain how the features of technologies impact on design decisions and they create designed solutions. They process data and show how digital systems represent data, design algorithms involving complex branching and iteration, and implement them as visual programs including variables. They select and justify design ideas and solutions against design criteria. Students share and communicate ideas or content to an audience using technical terms, graphical representation techniques and appropriate digital tools. They develop project plans, including production processes, and select technologies and techniques to safely produce designed or digital solutions. Students securely access and use multiple digital systems and describe their components and how they interact to process and transmit data. They identify their digital footprint and recognise its permanence.

By the end of Year 6 students develop and modify digital solutions, and define problems and evaluate solutions using user stories and design criteria. They process data and show how digital systems represent data. Students design algorithms involving complex branching and iteration and implement them as visual programs including variables. They securely access and use multiple digital systems and describe their components and how they interact to process and transmit data. Students select and use appropriate digital tools effectively to plan, create, locate and share content, and to collaborate, applying agreed conventions and behaviours. They identify their digital footprint and recognise its permanence.