

Australian Curriculum: Digital Technologies Years 5 and 6

BAND LEVEL DESCRIPTION

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

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.

CONTENT DESCRIPTIONS

Digital Technologies knowledge and understanding

Digital systems

investigate the main internal components of common digital systems and their function AC9TDI6K01

examine how digital systems form networks to transmit data AC9TDI6K02

Data representation

explain how digital systems represent all data using numbers AC9TDI6K03

explore how data can be represented by off and on states (zeros and ones in binary) AC9TDI6K04

Digital Technologies processes and production skills

Acquiring, managing and analysing data

Investigating and defining

define problems with given or codeveloped design criteria and by creating user stories AC9TDI6P01

Generating and defining

design algorithms involving multiple alternatives (branching) and iteration AC9TDI6P02

design a user interface for a digital system AC9TDI6P03

generate, modify, communicate and evaluate designs AC9TDI6P04

Producing and implementing

implement algorithms as visual programs involving control structures, variables and input AC9TDI6P05

Evaluating

evaluate existing and student solutions against the design criteria and user stories and their broader community impact AC9TDI6P06

Collaborating and managing

select and use appropriate digital tools effectively to create, locate and communicate content, applying common conventions AC9TDI6P07

select and use appropriate digital tools effectively to share content online, plan tasks and collaborate on projects, demonstrating agreed behaviours AC9TDI6P08

Privacy and security

access multiple personal accounts using unique passphrases and explain the risks of password re-use AC9TDI6P09

explain the creation and permanence of their digital footprint and consider privacy when collecting user data AC9TDI6P10