

BOONDALL STATE SCHOOL DIGITAL TECHNOLOGIES YEAR LEVEL PLAN – YEAR 5 & YEAR 6

Y5 & Y6

DIGITAL TECHNOLOGIES  
40 Mins. /week

Band Description	<p>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. They explain how digital systems use whole numbers as a basis for representing a variety of data types.</p> <p>Students define problems in terms of data and functional requirements and design solutions by developing algorithms to address the problems. They incorporate decision-making, repetition and user interface design into their designs and implement their digital solutions, including a visual program. They explain how information systems and their solutions meet needs and consider sustainability. Students manage the creation and communication of ideas and information in collaborative digital projects using validated data and agreed protocols.</p>
<b>Y5 &amp; Y6 (odd years) - C2C Unit 1</b>	
Unit Description	<p><b>A-maze-ing Digital Designs</b></p> <p>Students engage in a number of activities, including:</p> <ul style="list-style-type: none"> <li>investigating the functions and interactions of digital components and data transmission in simple networks, as they solve problems relating to digital systems</li> <li>following, modifying and designing algorithms that include branching and repetition</li> <li>developing skills in using a visual programming language within a <b>maze game</b> context</li> <li>working collaboratively to create a new maze game.</li> </ul> <p>Students will apply a range of skills and processes when creating digital solutions. They will:</p> <ul style="list-style-type: none"> <li>define problems by identifying appropriate data and functional requirements</li> <li>design a user interface, considering design principles</li> <li>follow, modify and design algorithms using simple statements, relating particular programming language statements (steps and decisions) to actions in the <b>game</b></li> <li>implement their game using visual programming</li> <li>evaluate how well their solutions meet needs</li> <li>plan, create and communicate ideas within a collaborative project, and apply agreed protocols when negotiating, providing feedback, developing plans and sharing online.</li> </ul>
Assessment	<p><b>Student responses to summative assessment tasks contribute to their assessment folio. It provides evidence of their learning and represents their achievements over reporting period. The assessment folio should include a range and balance of assessments to make valid judgments about whether the student has met the achievement standard.</b></p> <p>Assessment of student learning will be gathered from an assessment portfolio which includes a collaborative digital solution.</p> <p>Students will:</p> <ul style="list-style-type: none"> <li>explain the fundamentals of digital systems</li> <li>explain how digital systems are connected to form networks</li> <li>define problems in terms of data and functional requirements</li> <li>design a user interface and incorporate decision making and repetition into designs</li> <li>implement their digital solutions</li> <li>explain how student solutions are sustainable and meet needs</li> </ul>
Assessment Conventions	<p><b>Text – Design Brief and Evaluation Report</b></p> <p><b>Technique –</b></p> <p><b>Project:</b></p> <ul style="list-style-type: none"> <li>a folio capturing the design process undertaken by the student</li> <li>sequenced instructions</li> <li>interactive web application</li> <li>simulation, game or quiz</li> </ul> <p><b>Test:</b></p> <ul style="list-style-type: none"> <li>short response items</li> <li>explanation of a process and/or practical activity</li> <li>interpretation of tables and diagrams</li> </ul> <p><b>Mode –</b> Hard Copy and digitally</p> <p><b>Conditions –</b> Hard copy to be done independently</p> <p>Digital project can be done independently or in pairs for students who aren't confident in using devices.</p>

	Aspect of Achievement Standard	<p>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. They explain how digital systems use whole numbers as a basis for representing a variety of data types.</p> <p>Students define problems in terms of data and functional requirements and design solutions by developing algorithms to address the problems. They incorporate decision-making, repetition and user interface design into their designs and implement their digital solutions, including a visual program. They explain how information systems and their solutions meet needs and consider sustainability. Students manage the creation and communication of ideas and information in collaborative digital projects using validated data and agreed protocols.</p> <p><b>Taught</b> <b>Assessed</b></p>
	Unit Description	<p style="text-align: center;"><b>Y5 &amp; Y6 (even years) - C2C Unit 2</b></p> <p><b>Data Changing Our World</b></p> <p>Students explain how information systems meet local and community needs, represent a variety of data types in digital systems and design and create an interactive spreadsheet and share information ethically.</p> <p>Students apply a range of skills and processes when creating digital solutions. They:</p> <ul style="list-style-type: none"> <li>• explore information systems, including systems that deliver community information and explain how they meet needs</li> <li>• collect, manage and analyse data using a range of software (such as spreadsheets)</li> <li>• interpret and visualise data to create information</li> <li>• define problems by considering what the need is, what data is required, who the audience is and how they will interact with the solution, and what features need to be included</li> <li>• implement a digital solution that automates the processing of user input and presentation of information to solve a defined problem</li> <li>• apply technical protocols such as devising meaningful file naming conventions and determining safe storage locations to protect data and information.</li> </ul>
	Assessment	<p><b>Student responses to summative assessment tasks contribute to their assessment folio. It provides evidence of their learning and represents their achievements over reporting period. The assessment folio should include a range and balance of assessments to make valid judgments about whether the student has met the achievement standard.</b></p> <p><i>Portfolio</i> Assessment of student learning will be gathered from short answer questions and project work. Students will:</p> <ul style="list-style-type: none"> <li>• explain how existing information systems meet local and community needs</li> <li>• explain how whole numbers are used to represent all data in digital systems</li> <li>• define problems in terms of data</li> <li>• represent a variety of data types in digital systems</li> <li>• acquire, store and use validated data</li> <li>• design a user interface and incorporate decision making into designs</li> <li>• implement their digital solutions</li> </ul>
	Assessment Conventions	<p><b>Text</b> – Design Brief and Evaluation Report</p> <p><b>Technique</b> –</p> <p><b>Project:</b></p> <ul style="list-style-type: none"> <li>- a folio capturing the design process undertaken by the student using Microsoft Excel</li> <li>- sequenced instructions applying formulas and testing data for outcomes</li> </ul> <p><b>Test:</b></p> <ul style="list-style-type: none"> <li>- short response items</li> <li>- explanation of a process and/or practical activity</li> <li>- interpretation of tables and diagrams</li> </ul> <p><b>Mode</b> – Hard Copy and digitally</p> <p><b>Conditions</b> – Hard copy to be done independently</p> <p>Digital project can be done independently or in pairs for students who aren't confident in using devices.</p>
	Aspect of Achievement Standard	<p>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. They explain how digital systems use whole numbers as a basis for representing a variety of data types.</p> <p>Students define problems in terms of data and functional requirements and design solutions by developing algorithms to address the problems. They incorporate decision-making, repetition and user interface design into their designs and implement their digital solutions, including a visual program. They explain how information systems and their solutions meet needs and consider sustainability. Students manage the creation and communication of ideas and information in collaborative digital projects using validated data and agreed protocols.</p> <p><b>Taught</b> <b>Assessed</b></p>
	Moderation	<p><b>Consistency of teacher judgments</b></p> <p>Teachers use moderation to support consistency of teacher judgments and comparability of reported results against the relevant achievement standards.</p>

<b>Content Descriptors</b>	<b>Digital Technologies knowledge and understanding</b>	<b>C2C Unit 1</b>
	<b>Digital Systems</b>	
	Examine the main components of common digital systems and how they may connect together to form networks to transmit data (ACTDIK014) <b>BOTH</b>	✓
	<b>Representation of data</b>	
	Examine how whole numbers are used to represent all data in digital systems (ACTDIK015) <b>Even Year</b>	✓
	<b>Digital Technologies processes and production skills</b>	<b>C2C Unit 1</b>
	<b>Collecting, managing and analysing data</b>	
	Acquire, store and validate different types of data, and use a range of software to interpret and visualise data to create information (ACTDIP016) <b>Even Year</b>	✓
	<b>Investigating and defining</b>	
	Define problems in terms of data and functional requirements drawing on previously solved problems (ACTDIP017) <b>BOTH</b>	✓
	<b>Generating and designing</b>	
	Design a user interface for a digital system (ACTDIP018) <b>BOTH</b>	✓
	Design, modify and follow simple algorithms involving sequences of steps, branching, and iteration (repetition) (ACTDIP019) <b>Odd Year</b>	✓
	<b>Producing and implementing</b>	
	Implement digital solutions as simple visual programs involving branching, iteration (repetition) and user input (ACTDIP020) <b>Odd Year</b>	✓
	<b>Evaluating</b>	
Explain how student solutions and existing information systems are sustainable and meet current and future local community needs (ACTDIP021) <b>BOTH</b>	✓	
<b>Collaborating and managing</b>		
Plan, create and communicate ideas and information, including collaboratively online, applying agreed ethical, social and technical protocols (ACTDIP022) <b>BOTH</b>	✓	