



## SAMPLE TEACHING AND LEARNING OUTLINE

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**TECHNOLOGIES**

**DIGITAL TECHNOLOGIES**

**YEAR 1**

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Any resources such as texts, websites and so on that may be referred to in this document are provided as examples of resources that teachers can use to support their teaching and learning programs. Their inclusion does not imply that they are mandatory or that they are the only resources relevant to the learning area syllabus.

This document is an introduction to planning a teaching and learning outline with syllabus content for Year 1 Digital Technologies. It provides suggested sequencing and timing for teaching the syllabus content. For further details on curriculum requirements and available options, teachers should refer to the School Curriculum and Standards Authority’s (the Authority’s):

- *Policy Standards for Pre-primary to Year 10: Teaching, Assessing and Reporting*
- Table 1: *Western Australian Curriculum and Assessment Outline*: curriculum requirements and available options.

Sample plans provide a range of possible learning experiences from which assessment should be drawn. This *Year 1 Sample Teaching and Learning Outline* provides teachers with possible learning experiences over 34 hours and unpacks the syllabus content to assist teachers in their understanding.

A presentation (*Western Australian Curriculum Technologies Presentation*), which unpacks the process to develop this plan, is available on the Presentations page of the [Authority website \(https://k10outline.scsa.wa.edu.au/home/resources/presentations\)](https://k10outline.scsa.wa.edu.au/home/resources/presentations).

## Year 1 Syllabus Content – Digital Technologies

Content	Description
<b>Digital systems</b>	Digital systems (hardware and software) are used in everyday life and have specific features
<b>Representation of data</b>	Data can have patterns and can be represented as pictures, symbols and diagrams
<b>Collecting, managing and analysing data</b>	Present data using a variety of digital tools
<b>Digital implementation</b>	Use data to solve similar tasks/problems Share and publish information with known people in an online environment, modelling strategies to stay safe online
<b>Investigating and defining</b>	Explore opportunities for design
<b>Designing</b>	Develop and communicate design ideas through describing, drawing, modelling and/or a sequence of written or spoken steps
<b>Producing and implementing</b>	Use given components and equipment to safely make solutions
<b>Evaluating</b>	Use personal preferences to evaluate the success of design processes
<b>Collaborating and managing</b>	Work independently, or with others when required, to create and safely share sequenced steps for solutions

## **Year Level Description**

Learning in digital technologies builds on the dispositions developed in the early years. Learning focuses on expanding on foundational skills in computational thinking and, with developing confidence, students engage in personal experiences using digital systems.

In Year 1, students have opportunities to create a range of solutions through guided learning.

Students learn about common digital systems and patterns that exist within data they collect, and how they may include pictures, symbols and diagrams. They explore ways to organise and manipulate data, including numerical, text, image, audio and video data, to create meaning and present the data using simple digital systems.

Students explore problems to identify the most important information. Students learn to explain algorithms as a sequence of steps for carrying out instructions.

Students explore how information systems meet information and recreational needs. They develop an understanding of online environments and the need for safety considerations.

Year 1 Learning Area: Technologies – Digital Technologies

**Year 1 Achievement Standard**

At Standard, students identify specific features of digital systems (hardware and software) and where they are used in everyday life. They represent data using pictures, symbols and diagrams. Students follow strategies to stay safe online while they select and use a variety of digital tools to present information in an online environment.

In digital technologies, students explore opportunities when designing products or solutions. They develop and communicate design ideas through describing, drawing, modelling and/or a sequence of written or spoken steps. Students use given components and equipment and work safely to make solutions. They develop personal preferences to evaluate the success of design processes. Students work independently, or with others, to safely create and share sequenced steps for solutions.

Approx. hours	Syllabus content	Content unpacked	Suggested teaching and learning experiences
6	<b>Digital systems</b> Digital systems (hardware and software) are used in everyday life and have specific features	<ul style="list-style-type: none"> <li>Hardware is defined as the tangible components of a computer – focus on peripheral devices at this stage.</li> <li>Software is the intangible elements of a computer system and consists of programs and applications created in order to perform specific tasks.</li> </ul>	<ul style="list-style-type: none"> <li>Discuss the relevance and application of digital systems in everyday life.</li> <li>Introduce hardware and software in relation to students’ bodies (hardware) and the brain (software).</li> <li>Use play to consolidate understanding and to engage meaningful and inquiry-based experiences.</li> <li>Communicate through detailed drawing and/or a sequence of written or spoken steps and how the message from the brain (software) translates to the mechanics of the body (hardware).</li> <li>Categorise everyday computer hardware and software: <ul style="list-style-type: none"> <li>describe features of digital systems</li> <li>use relevant examples and discuss where they are used in everyday life.</li> <li>identify basic computer parts (<a href="https://edu.gcfglobal.org/en/computerbasics/basic-parts-of-a-computer/1/">GCF Global https://edu.gcfglobal.org/en/computerbasics/basic-parts-of-a-computer/1/</a>) and match software with its intended purpose, e.g. software can be used to draw</li> <li>use old hardware and demonstrate how to correctly plug and unplug devices.</li> </ul> </li> <li>What are the similarities and differences between mobile devices and desktop systems used in the classroom?</li> <li>Identify hardware: <ul style="list-style-type: none"> <li>physically attach labels onto relevant computer hardware</li> <li>label a diagram or cut and paste labels as developmentally appropriate.</li> </ul> </li> </ul> <p>Further resources:</p> <ul style="list-style-type: none"> <li><a href="https://www.digitaltechnologieshub.edu.au/resourcedetail?id=75e54b98-09f9-6792-a599-ff000f327dd#/">Digital Technologies Hub – Digital systems cards (https://www.digitaltechnologieshub.edu.au/resourcedetail?id=75e54b98-09f9-6792-a599-ff000f327dd#/)</a>.</li> <li>Activity: <a href="https://k10outline.scsa.wa.edu.au/home/assessment/assessment-activities/year">School Curriculum and Standards Authority – We live in a digital world (https://k10outline.scsa.wa.edu.au/home/assessment/assessment-activities/year)</a>.</li> </ul>
4	<b>Producing and implementing</b> Use given components and equipment to safely make solutions	<ul style="list-style-type: none"> <li>Equipment can include desktop computers or other devices.</li> <li>Safe use of equipment refers to equipment in a physical sense and in an online environment, including software, apps and webpages.</li> </ul>	<ul style="list-style-type: none"> <li>Discuss correct and incorrect use of equipment.</li> <li>Identify correct and incorrect use of desktop computers or devices in images and photographs: <ul style="list-style-type: none"> <li>use photographs of class members and annotate to create a safe equipment poster/s <ul style="list-style-type: none"> <li>combine ideas into a collective poster, image or infographic</li> <li>possible software includes Visual.ly™ or Piktochart™.</li> </ul> </li> </ul> </li> <li>Discuss online safety and model appropriate and relevant strategies to stay safe online: <ul style="list-style-type: none"> <li>annotate an image or drawing with a sequence of steps to demonstrate safe online behaviour.</li> </ul> </li> </ul>
6	<b>Representation of data</b> Data can have patterns and can be represented as pictures, symbols and diagrams	<ul style="list-style-type: none"> <li>Data is everywhere. Data types include: <ul style="list-style-type: none"> <li>text</li> <li>symbols</li> <li>numbers.</li> </ul> </li> <li>Data can be represented collectively in places, such as: <ul style="list-style-type: none"> <li>a comic book</li> <li>a warning sign</li> <li>a bus timetable.</li> </ul> </li> <li>A pattern is the repetition of something.</li> </ul>	<ul style="list-style-type: none"> <li>Design a simple image that is representative of a letter of the alphabet (code).</li> <li>Develop simple images that represent each letter of the alphabet, as a class.</li> <li>Represent student’s data (names) using the pictures and symbols.</li> <li><a href="https://www.digitaltechnologieshub.edu.au/teachers/lesson-ideas/data-detective">Data activity: Digital Technologies Hub – Data Detective (https://www.digitaltechnologieshub.edu.au/teachers/lesson-ideas/data-detective)</a>.</li> <li>Further resources: <ul style="list-style-type: none"> <li><a href="https://www.digitaltechnologieshub.edu.au/teachers/scope-and-sequence/f-2/explore-data/data-is-all-around-us">Digital Technologies Hub – Data is all around us (https://www.digitaltechnologieshub.edu.au/teachers/scope-and-sequence/f-2/explore-data/data-is-all-around-us)</a>.</li> </ul> </li> </ul>

Approx. hours	Syllabus content	Content unpacked	Suggested teaching and learning experiences
		<ul style="list-style-type: none"> <li>Assumptions can be made about patterns, such as what number/s come next, e.g. 2, 4, 6, 8; what colour combinations can be made; what shape patterns can be made.</li> </ul>	<ul style="list-style-type: none"> <li>Activity: School Curriculum and Standards Authority – Hidden Treasure from the Judging Standards section on the Extranet (access requires registration).</li> </ul>
4	<p><b>Collecting, managing and analysing data</b> Present data of any kind using a variety of digital tools</p>	<ul style="list-style-type: none"> <li>Data can be presented through visualisation, such as images, text, graphs etc., or through sound.</li> <li>Digital tools can include software, such as: <ul style="list-style-type: none"> <li>MS Paint™</li> <li>GarageBand™</li> <li>Sound recorder™</li> <li>Piktochart™.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Select an animal or other physical object (that students have a connection with).</li> <li>Design an image and sound combination that represents the animal or physical object.</li> <li>Draw a sequence of steps that represent the process.</li> <li>Present the data using the appropriate digital tool.</li> </ul>
4	<p><b>Digital implementation</b> Use data to solve a simple task/problem  Share and publish information with known people in an online environment, modelling strategies to stay safe online</p>	<ul style="list-style-type: none"> <li>Data is defined as raw, unprocessed information.</li> <li>Data can be gathered from a variety of sources, including surveys and interviews.</li> <li>Data should be used to help inform solutions to problems.</li> <li>Sharing and publishing information can be carried out in a variety of applications, for example, students can create a class blog or use their learning management systems to complete an activity, such as weekly show and tell.</li> </ul>	<ul style="list-style-type: none"> <li>Discuss data connected to people – names, hair colour, colour preferences and birthdates.</li> <li>Investigate ways to represent non-visual information (colour preference and birth month) using symbols.</li> <li>Problem solve ways to organise groups, without verbal communication, into categories to reflect favourite colours and the correct sequencing of birth months.</li> <li>Discuss whether the order is correct and why decisions were made.</li> <li>Evaluate the success of the grouping and make changes to the symbols selected to represent data.</li> <li>Discuss improvements or changes to the symbols and how the changes provide clarification.</li> <li>Create a class blog or use learning management systems to present an activity, such as sharing class news or presenting information and/or learning.</li> <li>Discuss the importance of being safe in an online environment, information sharing online and ‘stranger danger’ in an online capacity.</li> </ul>
10	<p><b>Investigating and defining</b> Explore opportunities for design</p> <p><b>Designing</b> Develop and communicate design ideas through describing, drawing, modelling and/or a sequence of written or spoken steps</p> <p><b>Evaluating</b> Use personal preferences to evaluate the success of design processes</p> <p><b>Collaborating and managing</b> Work independently, or with others when required, to create and safely share sequenced steps for solutions</p>	<ul style="list-style-type: none"> <li>Design focus: <ul style="list-style-type: none"> <li>a solution to a set problem in the digital world.</li> </ul> </li> <li>Designs may be: <ul style="list-style-type: none"> <li>hand-drawn</li> <li>created using software applications</li> <li>created using a collage.</li> </ul> </li> <li>Sequence and steps are important for logical understanding in computational thinking. Computers simply work in order (top to bottom) and require specific instructions.</li> </ul>	<ul style="list-style-type: none"> <li>Investigate age appropriate websites and/or apps: <ul style="list-style-type: none"> <li>consider and discuss website and app design ideas (use screenshot of website or app)</li> <li>discuss design features and a given simple set of criteria that makes a design ‘successful’</li> <li>annotate an example, either digitally or in hardcopy, to communicate personal preferences</li> <li>share and communicate the annotations.</li> </ul> </li> <li>Investigate design opportunities for robots and automation: <ul style="list-style-type: none"> <li>create a list of jobs completed by humans at home or in the classroom</li> <li>explain automation in the workplace and provide relevant and appropriate visual examples</li> <li>discuss examples of automation and robots, and the jobs completed through automation</li> <li>discuss the opportunity for the automation of other tasks and jobs</li> <li>develop and communicate design ideas through describing, drawing design and annotating a robot: <ul style="list-style-type: none"> <li>discuss the design features of the robot</li> <li>communicate with others the design features of the robot</li> </ul> </li> <li>develop a sequence of steps that exemplifies the automation task the robot will perform.</li> </ul> </li> <li>Design a classroom and/or school maze using a sequence of written or spoken steps: <ul style="list-style-type: none"> <li>revise left and right directionality and accuracy that can be applied by counting steps</li> <li>create a sequence of steps (written or spoken) independently or with others</li> <li>perform the sequence of steps</li> <li>evaluate the success of the design.</li> </ul> </li> <li>Provide feedback and opportunity to address errors.</li> </ul>

Note: the notional teaching hours for the Digital Technologies learning area is 40 hours. The notional hours assume a 25-hour teaching week over 40 teaching weeks per year. It is recognised that school teaching hours often exceed 25 hours per week and that the length of the school year may vary.