Digital Technologies Curriculum		Year Levels: Foundation to 2
Content Descriptors	**Example Can Do Statements - SOLO Taxonomy** https://www.digitaltechnologieshub.edu.au/teachers/scope-and-sequence/f-2 https://aca.edu.au/curriculum/f-2/	**Possible Activities** (All Links work as of April 2020)
Digital Systems **#1 Recognise and explore digital systems (hardware and software components) for a purpose (ACTDIK001)**	Hardware and Software (Level F – 1) - I can IDENTIFY a digital system - I can POINT to the hardware of a computer - I can NAME some software we use in class Computational Thinking - I can MATCH the software to its use - I can USE some software to write a story, draw a picture or send a message Design Thinking - I can CHOOSE and USE software for a particular purpose - I can CREATE a model of a digital system and EXPLAIN the parts and software it uses Changes in Technology (Level 2) - I can IDENTIFY modern day technology when compared with technology of the past Systems Thinking - I can DECRIBE ways technology has changed over time - I can COMPARE two types of technology that are used for a similar purpose and explain how functions have improved or that are new - I can SUGGEST a particular type of technology for a particular purpose and describe its usefulness	- https://aca.edu.au/resources/#years-f-2 - https://www.digitaltechnologieshub.edu.au/teachers/scope-and-sequence/f-2 **Foundation** - Vocabulary – Laptop, Computer, keyboard, mouse, monitor, systems unit, Control, Alt, Delete, Start, Log off, Log in, Enter - Stick the computer parts together to make a computer - Use a camera or iPad to capture data **Level 1** - Vocabulary – Microsoft Edge/Chrome, Power point, Word, Photo Story, Space bar, Shift, Caps Lock, Back space, Screen, Delete, Apps, tablet and iPad - Label the major parts of a computer - Download an image from the internet - Use a camera or iPad to capture data and download to a computer **Level 2** - Vocabulary – Arrow keys, Function Keys, Qwerty, Tab, Excel, Snipping Tool, Restart - Build a 3D model of a computer and label it - Download images from the internet and use in a presentation - Use a devise (ipad, video camera, web cam, camera) to capture data, transfer data to a computer and use in a presentation - Use Snipping Tool to capture data
Data and Information **#2 Recognise and explore**	Data is all around us (Level F – 1) I can identify different types of data.	**Foundation** - Use the internet whiteboard (IWB) to create patterns - Use IWB to sort data into groups

patterns in data and represent data as pictures, symbols and diagrams (ACTDIK002)	• I can record data about myself. Computational Thinking • I can sort data into groups and describe each group type. • I can organise the data so I can make sense of the data. • I can describe patterns in the data. • I can represent data in different ways using symbols and images. • I can collect data and record it in a table and describe any patterns. Design Thinking • I can create a chart to visually present data and with help use relevant software to create a simple chart.	**Level 1** • Part of a Pattern (learning objective) • Use IWB to sort data into tables • Explain data as any information **Level 2** • Make a pattern using Word or paint • Sort data into a table (Word or Excel) • Explain different types of data as pictures, symbols and diagrams
Data and Information **#3 Collect, explore and sort data, and use digital systems to present the data creatively (ACTDIP003)**	Exploring Data (Level 2) • I can define what data is and suggest examples of types of data Computational Thinking • I can sort and organise data and identify patterns in data • I can represent data in different ways • I can collect data and record the data into a table organised using headings Design Thinking • I can create a chart/graph and discuss its usefulness • I can create a digital chart/graph using relevant software.	**Foundation** • Use an IWB to create a graph of the students collected data (hair colour, eye colour, smarties) (links to Prep Maths) • Use iMovie to make a presentation of their school, classroom or family • Use IWB to make a mind map of a story (links to Foundation English) **Level 1** • Tally the toy (learning object) (links to Year 1 Maths) • Use a Wordle to present the data collected of their favourite food, drink, subject, toy, game • Use IWB or iPad to make a mind map for a topic **Level 2** • Use Excel to create a spread sheet of data collected by students and create a graph (links to Year 2 Maths) • Use Paint or Word to create a mind map for another subject • Use Photo story or Power point to create a presentation
Data and Information **#4 Create and organise ideas and information using information systems**		**Foundation** • Work together in a group to create an iMovie or a word document **Level 1** • Work together in a group to create a photo story and publish

independently and with others, and share these with known people in safe online environments (ACTDIP006)		**Level 2** • Use Edstudio or a Website to publish group projects • Look at copyright of images and what can and can't be published • Discuss online safety and safe websites
Creating Digital Solutions **#5 Follow, describe and represent a sequence of steps and decisions (algorithms) needed to solve simple problems (ACTDIP004)**	<u>An Introduction to Algorithms (Level F – 1)</u> • I can identify and follow a series of steps to complete a task Computational Thinking • I can describe the steps of an algorithm for a simple task • I can represent an algorithm using images • I can create an algorithm to control a push button robot Design Thinking • I can confidently create an algorithm to control a push button robot with multiple steps and debug as I go <u>Pre-Programming (Level 2)</u> • I can identify and follow a series of steps to complete a task Computational Thinking • I can describe the steps of an algorithm for a simple task • I can represent an algorithm using images • I can use commands to program a push button robot or use colours to code a light sensing robot Design Thinking • I can create a simple animation by using visual programming blocks (note: above level Can Do) <u>Online Safety (Level F – 1)</u>	**Foundation** • Interactive sequencing activities • Use Bee bot app • Use Bee bots or Robot Mouse to move over mats (primary treasure or communication4all) and follow directions **Level 1** • Use Bee bots or Robot Mouse (getting from one place to the other) • Make a photo story/power point to explain a sequence (links with Year 1 English) • Use Sphero ball to make programs to move the ball around **Level 2** • Use **Pro bots** to draw a shape • Make a "How to Do" instructions explaining how to make something on the computer • Use **Sphero ball** to program to travel a set path **Other** • **Digital Technologies: Algorithms In Plain English** – video by Digital Learning and Teaching Victoria • **BeeBots used for numeracy activities** • **Plant a seed**: this unplugged lesson idea supports students to think about how computers work by following specific instructions. Students need to work out which instructions are important to plant a seed and order them correctly. The teachers explicitly teach and discuss how this is a similar way that a computer works and instructions determine the outcome which may change. Connections could be made with this area of the curriculum when teaching

- I can identify safe and unsafe information
- I can describe why certain information is unsafe to share

Computational Thinking

- I can use my understanding of what is safe and appropriate behaviour in order to determine a set of guidelines or rules about how to behave online
- I can apply the agreed protocols and rules to work in a collaborative way effectively

Design Thinking

- I can bookmark a safe website to revisit at a later stage and explain the usefulness of this approach
- I can collect and present information from a safe website for a particular purpose or to answer a question

Staying Safe Online (Level 2)

- I can identify a weak password versus a strong password
- I can identify behaviour that constitutes cyberbullying
- I can identify potential online dangers
  Systems Thinking
- I can use my understanding of a weak password to create a strong and robust password
- I can use my understanding of cyberbullying to develop a set of guidelines around appropriate behaviour
- I can apply safe online behaviour protocols to collaborate respectfully with my peers in an online space

Design Thinking

- I can collaborate to create a document in an online

Creating Digital Solutions

#6 Explore how people safely use common information systems to meet information, communication and recreation needs (ACTDIP005)

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students about procedure texts in English.

- **Graph paper programming**: students learn to program each another, by giving instructions to draw a picture. They explore the concepts of programming (unplugged)
- **Creating instructions for planting fruit and vegetables** - investigate and document how to successfully plant and grow fruit or vegetables, follow a simple algorithm

Technology

Bee Bots, Spheros, Dash and Dot Robots, Scratch Jr, Kodable

Foundation

- Investigate and design a poster to explain what technology their family uses in word (links to Prep Design Technology)
- Discuss basic safety concerns with handling computers and electricity

Level 1

- Create a poster to explain the past and today toys and equipment students use to play with (links with Year 1 History)
- Explain the safety requirements for working on a computer and ergonomics

Level 2

- Create a poster classifying the information systems as information, communication and recreation
- Discuss cyber safety (Cyber Smart)

General

- **Hector's World lesson plans**: Hector's World is an age appropriate animation with fun and engaging characters that explores digital safety. Children can observe the characters as they learn how to stay safe online. Teachers can find full lesson plans on the website to help scaffold class discussions and follow up activities.

		space that involves the input of multiple people	• **Growing Up Digital classroom resources**: this Department website leads teachers to a comprehensive list of resources to support them to investigate cyber safety topics.

Foundation to Level 2 Achievement Standard

By the end of Year 2, students identify how common digital systems (hardware and software) are used to meet specific purposes. They use digital systems to represent simple patterns in data in different ways.

Students design solutions to simple problems using a sequence of steps and decisions. They collect familiar data and display them to convey meaning. They create and organise ideas and information using information systems, and share information in safe online environments.

Learning Area Achievement Standard

By the end of Year 2, students describe the purpose of familiar products, services and environments and how they meet a range of present needs. They list the features of technologies that influence design decisions and identify how digital systems are used.

Students identify needs, opportunities or problems and describe them. They collect, sort and display familiar data from a range of sources and recognise patterns in data. Students record design ideas using techniques including labelled drawings, lists and sequenced instructions. They design solutions to simple problems using a sequence of steps and decisions. With guidance, students produce designed solutions for each of the prescribed technologies contexts. Students evaluate their ideas, information and solutions on the basis of personal preferences and provided criteria including care for the environment. They safely create solutions and communicate ideas and information face-to-face and online.

Foundation to Year 2 Band Description

Learning in Digital Technologies builds on concepts, skills and processes developed in the Early Years Learning Framework. It focuses on developing foundational skills in computational thinking and an awareness of personal experiences using digital systems.

By the end of Year 2, students will have had opportunities to create a range of digital solutions through guided play and integrated learning, such as using robotic toys to navigate a map or recording science data with software applications.

In Foundation – Year 2, students begin to learn about common digital systems and patterns that exist within data they collect. Students organise, manipulate and present this data, including numerical, categorical, text, image, audio and video data, in creative ways to create meaning.

Students use the concept of abstraction when defining problems, to identify the most important information, such as the significant steps involved in making a sandwich. They begin to develop their design skills by conceptualising algorithms as a sequence of steps for carrying out instructions, such as identifying steps in a process or controlling robotic devices.

Students describe how information systems meet information, communication and/or recreational needs.

Through discussion with teachers, students learn to apply safe and ethical practices to protect themselves and others as they interact online for learning and communicating.