Curriculum planning in the Digital Technologies curriculum

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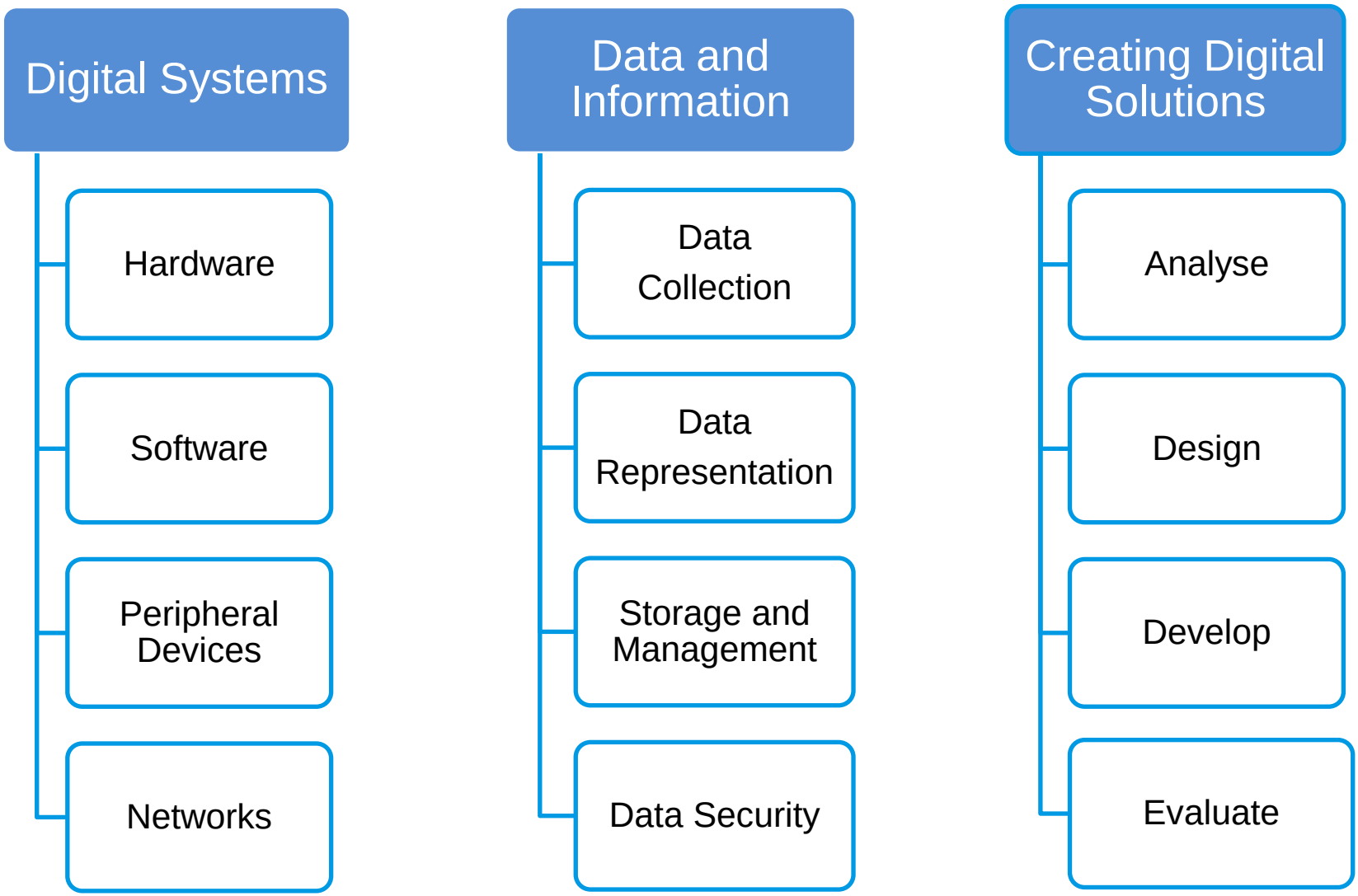
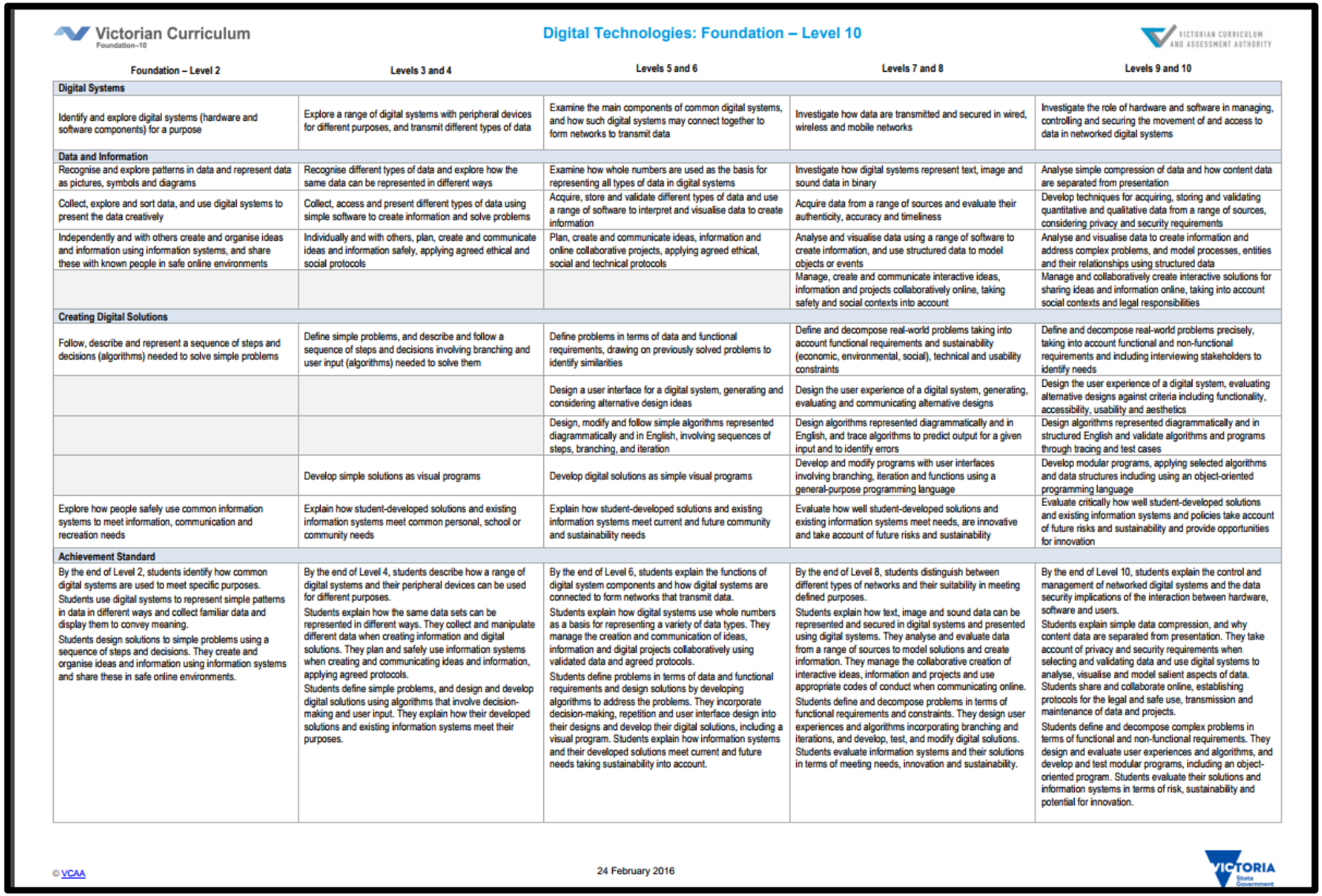
Strands



Scope and Sequence



Victorian Curriculum
Foundation–10

Digital Technologies: Foundation – Level 10

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Foundation – Level 2	Levels 3 and 4	Levels 5 and 6	Levels 7 and 8	Levels 9 and 10
Digital Systems				
Identify and explore digital systems (hardware and software components) for a purpose	Explore a range of digital systems with peripheral devices for different purposes, and transmit different types of data	Examine the main components of common digital systems, and how such digital systems may connect together to form networks to transmit data	Investigate how data are transmitted and secured in wired, wireless and mobile networks	Investigate the role of hardware and software in managing, controlling and securing the movement of and access to data in networked digital systems
Data and Information				
Recognise and explore patterns in data and represent data as pictures, symbols and diagrams	Recognise different types of data and explore how the same data can be represented in different ways	Examine how whole numbers are used as the basis for representing all types of data in digital systems	Investigate how digital systems represent text, image and sound data in binary	Analyse simple compression of data and how content data are separated from presentation
Collect, explore and sort data, and use digital systems to present the data creatively	Collect, access and present different types of data using simple software to create information and solve problems	Acquire, store and validate different types of data and use a range of software to interpret and visualise data to create information	Acquire data from a range of sources and evaluate their authenticity, accuracy and timeliness	Develop techniques for acquiring, storing and validating quantitative and qualitative data from a range of sources, considering privacy and security requirements
Independently and with others create and organise ideas and information using information systems, and share these with known people in safe online environments	Individually and with others, plan, create and communicate ideas and information safely, applying agreed ethical and social protocols	Plan, create and communicate ideas, information and online collaborative projects, applying agreed ethical, social and technical protocols	Analyse and visualise data using a range of software to create information, and use structured data to model objects or events	Analyse and visualise data to create information and address complex problems, and model processes, entities and their relationships using structured data
			Manage, create and communicate interactive ideas, information and projects collaboratively online, taking safety and social contexts into account	Manage and collaboratively create interactive solutions for sharing ideas and information online, taking into account social contexts and legal responsibilities
Creating Digital Solutions				
Follow, describe and represent a sequence of steps and decisions (algorithms) needed to solve simple problems	Define simple problems, and describe and follow a sequence of steps and decisions involving branching and user input (algorithms) needed to solve them	Define problems in terms of data and functional requirements, drawing on previously solved problems to identify similarities	Define and decompose real-world problems taking into account functional requirements and sustainability (economic, environmental, social), technical and usability constraints	Define and decompose real-world problems precisely, taking into account functional and non-functional requirements and including interviewing stakeholders to identify needs
		Design a user interface for a digital system, generating and considering alternative design ideas	Design the user experience of a digital system, generating, evaluating and communicating alternative designs	Design the user experience of a digital system, evaluating alternative designs against criteria including functionality, accessibility, usability and aesthetics
		Design, modify and follow simple algorithms represented diagrammatically and in English, involving sequences of steps, branching, and iteration	Design algorithms represented diagrammatically and in English, and trace algorithms to predict output for a given input and to identify errors	Design algorithms represented diagrammatically and in structured English and validate algorithms and programs through tracing and test cases
	Develop simple solutions as visual programs	Develop digital solutions as simple visual programs	Develop and modify programs with user interfaces involving branching, iteration and functions using a general-purpose programming language	Develop modular programs, applying selected algorithms and data structures including using an object-oriented programming language
Explore how people safely use common information systems to meet information, communication and recreation needs	Explain how student-developed solutions and existing information systems meet common personal, school or community needs	Explain how student-developed solutions and existing information systems meet current and future community and sustainability needs	Evaluate how well student-developed solutions and existing information systems meet needs, are innovative and take account of future risks and sustainability	Evaluate critically how well student-developed solutions and existing information systems and policies take account of future risks and sustainability and provide opportunities for innovation
Achievement Standard				
By the end of Level 2, students identify how common digital systems are used to meet specific purposes. Students use digital systems to represent simple patterns in data in different ways and collect familiar data and display them to convey meaning. Students design solutions to simple problems using a sequence of steps and decisions. They create and organise ideas and information using information systems and share these in safe online environments.	By the end of Level 4, students describe how a range of digital systems and their peripheral devices can be used for different purposes. Students explain how the same data sets can be represented in different ways. They collect and manipulate different data when creating information and digital solutions. They plan and safely use information systems when creating and communicating ideas and information, applying agreed protocols. Students define simple problems, and design and develop digital solutions using algorithms that involve decision-making and user input. They explain how their developed solutions and existing information systems meet their purposes.	By the end of Level 6, students explain the functions of digital system components and how digital systems are connected to form networks that transmit data. Students explain how digital systems use whole numbers as a basis for representing a variety of data types. They manage the creation and communication of ideas, information and digital projects collaboratively using validated data and agreed protocols. 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 develop their digital solutions, including a visual program. Students explain how information systems and their developed solutions meet current and future needs taking sustainability into account.	By the end of Level 8, students distinguish between different types of networks and their suitability in meeting defined purposes. Students explain how text, image and sound data can be represented and secured in digital systems and presented using digital systems. They analyse and evaluate data from a range of sources to model solutions and create information. They manage the collaborative creation of interactive ideas, information and projects and use appropriate codes of conduct when communicating online. Students define and decompose problems in terms of functional requirements and constraints. They design user experiences and algorithms incorporating branching and iterations, and develop, test, and modify digital solutions. Students evaluate information systems and their solutions in terms of meeting needs, innovation and sustainability.	By the end of Level 10, students explain the control and management of networked digital systems and the data security implications of the interaction between hardware, software and users. Students explain simple data compression, and why content data are separated from presentation. They take account of privacy and security requirements when selecting and validating data and use digital systems to analyse, visualise and model salient aspects of data. Students share and collaborate online, establishing protocols for the legal and safe use, transmission and maintenance of data and projects. Students define and decompose complex problems in terms of functional and non-functional requirements. They design and evaluate user experiences and algorithms, and develop and test modular programs, including an object-oriented program. Students evaluate their solutions and information systems in terms of risk, sustainability and potential for innovation.

24 February 2016

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http://victoriancurriculum.vcaa.vic.edu.au/technologies/digital-technologies/introduction/scope-and-sequence

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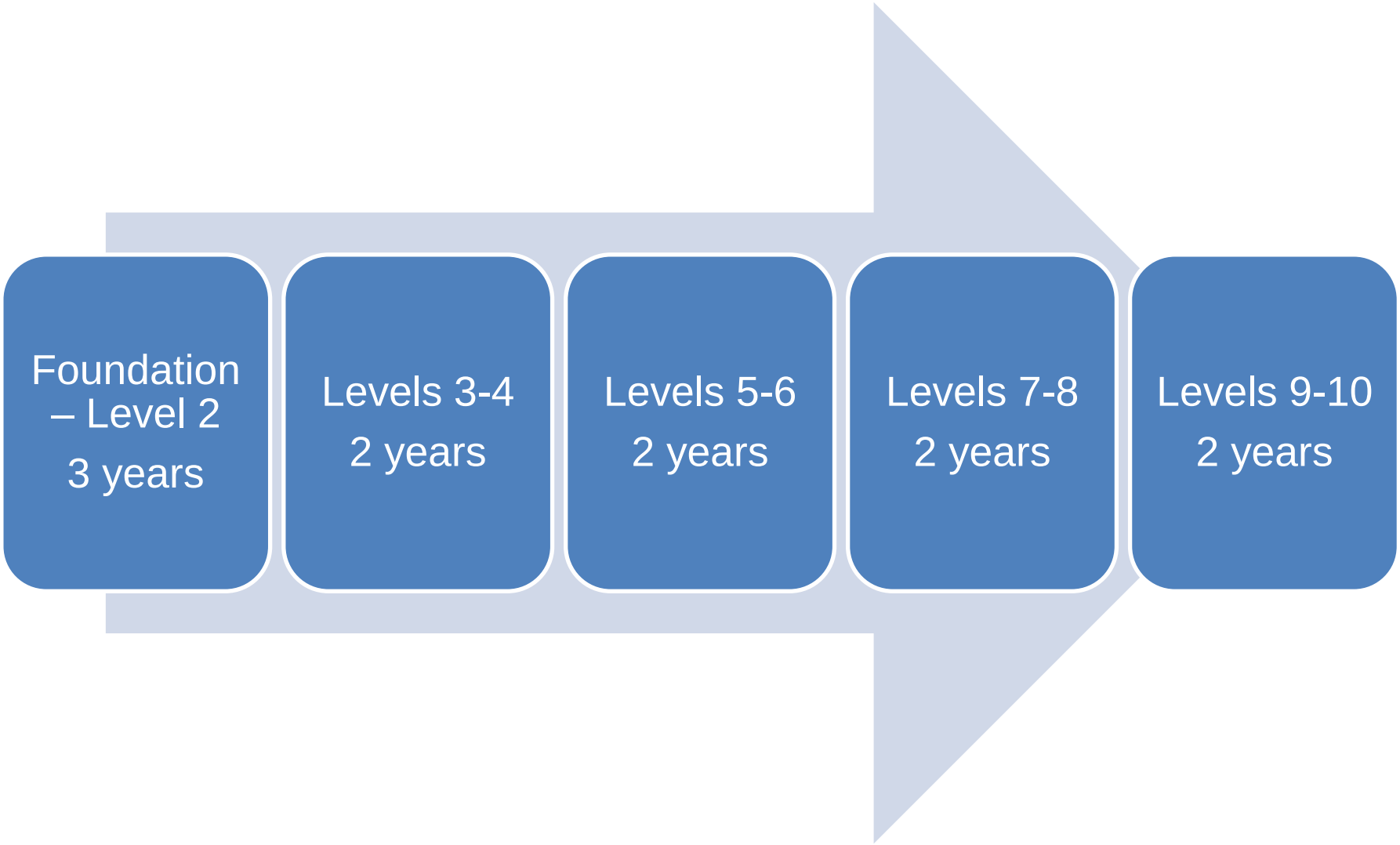
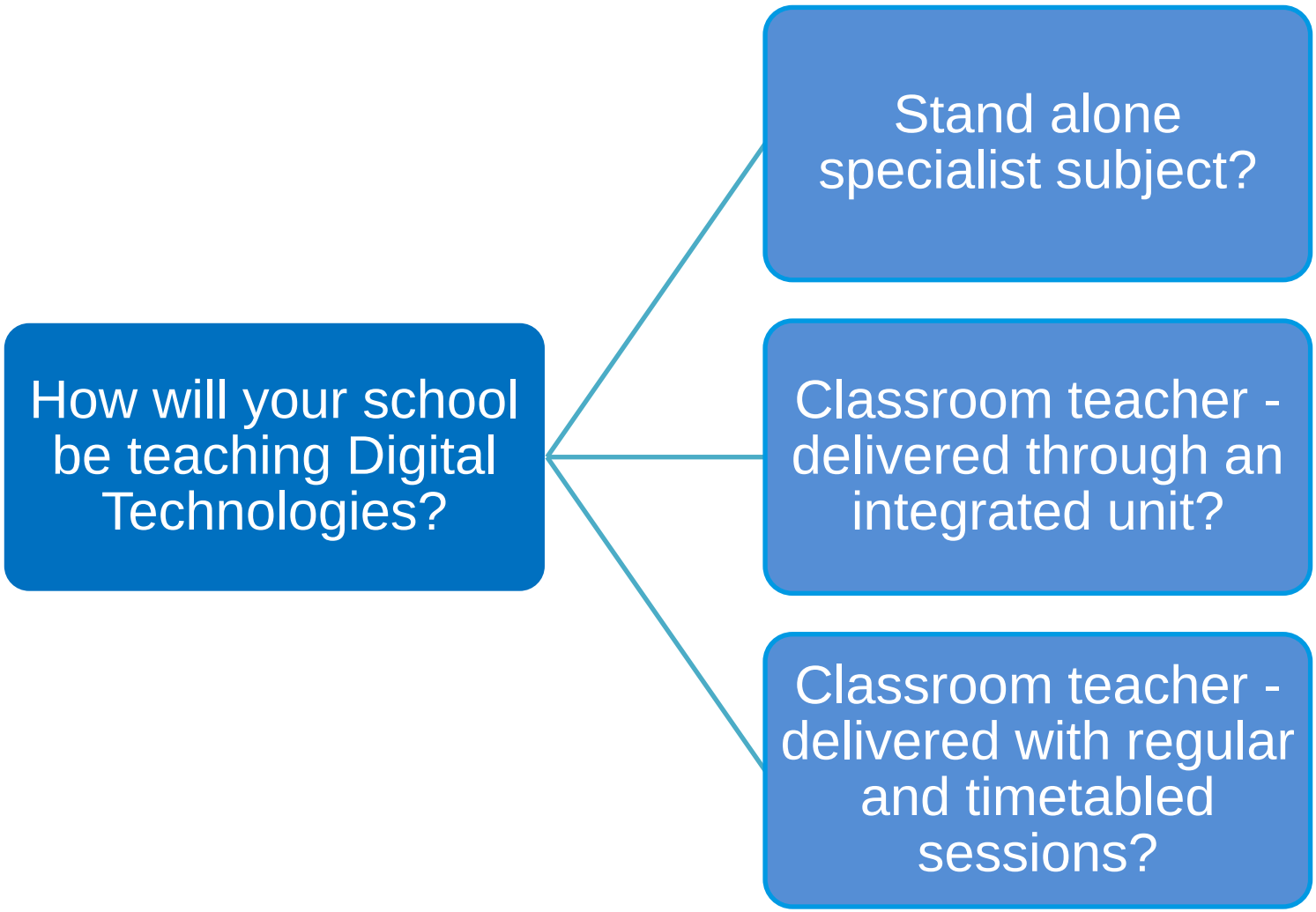
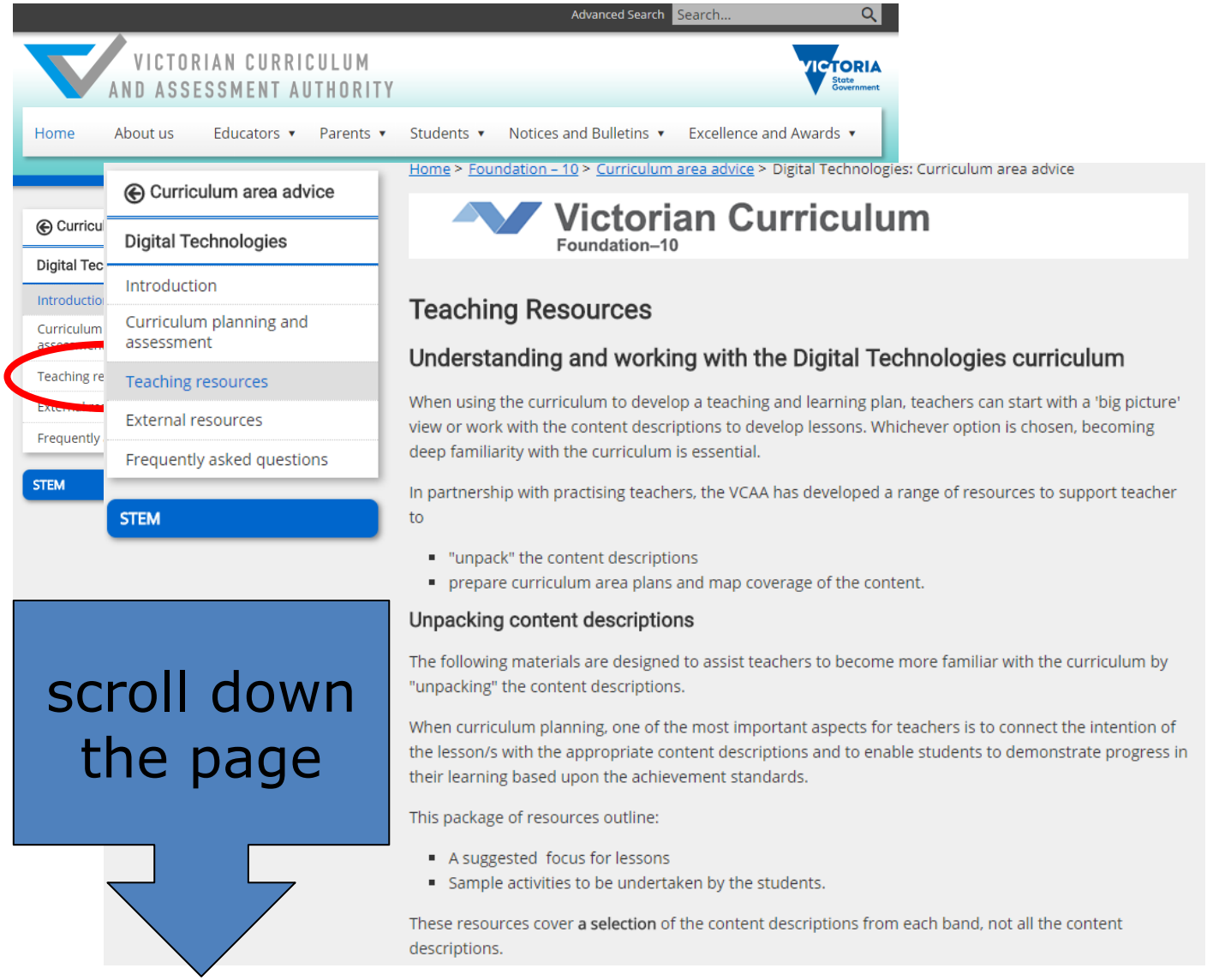
Banded Levels



Before you start…



Navigating the resources



scroll down the page

http://www.vcaa.vic.edu.au/Pages/foundation10/viccurriculum/digitech/intro.aspx

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Teaching resources

YR/LvL	Unpacking the Content Descriptions
F-2	Unpacking_Digital_Technologies_Content_Descriptions (docx - 366.61kb)
3-4	Unpacking_Digital_Technologies_Content_Descriptions (docx - 367.16kb)
5-6	Unpacking_Digital_Technologies_Content_Descriptions (docx - 365.02kb)
7-8	Unpacking_Digital_Technologies_Content_Descriptions (docx - 367.71kb)
9-10	Unpacking_Digital_Technologies_Content_Descriptions (docx - 369.45kb)

Several different examples at each level

YR/LvL	Program Planning Template	Curriculum Area Plan
F-2	DigiTech_CPT_F-2 (docx - 181.53kb)	DigiTech_P-2_Curriculum_Area_Plan (docx - 84.79kb)
3-4	DigiTech_CPT_3-4 (docx - 232.05kb)	DigiTech_3-4_Curriculum_Area_Plan (docx - 75.08kb)
5-6	DigiTech_CPT_5-6 (docx - 373.6kb)	DigiTech_5-6_Curriculum_Area_Plan (docx - 76.12kb)
7-8	DigiTech_CPT_7-8 (docx - 428.75kb)	DigiTech_7-8_Curriculum_Area_Plan (docx - 73.88kb)
9-10	DigiTech_CPT_9-10 (docx - 340.31kb)	DigiTech_9-10_Curriculum_Area_Plan (docx - 71.1kb)

Three different samples at each level – Planning Templates and Area Plans match up

http://www.vcaa.vic.edu.au/Pages/foundation10/viccurriculum/digitech/teachresources.aspx

Curriculum Area Plan F-2

Curriculum Area Plan: Digital Technologies - Prep to Year 2 (Sample Program 1)

Year Level and Semester

		Week 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Year F	Semester 1																		
	Semester 2											Our computers							
Year 1	Semester 1					Recognise and explore patterns – 1.1.1													
						Finding patterns													
	Semester 2					Present data using digital systems – 1.2.1													
						Sharing data													
Year 2	Semester 1											Create and organise ideas – 2.1.1							
												Sharing our work							
	Semester 2				Represent a sequence of steps and decisions – 2.2.1							Explore how to safely use information systems – 2.2.2							
					Programming a partner							Devices in our lives							
	Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

* Based on 1 hour of teaching time per week

Key: Digital Systems | Data and Information | Creating Digital Solutions | Topic, level, semester, sequence

Week of Semester

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Curriculum Area Plan F-2

Curriculum Area Plan: Digital Technologies - Prep to Year 2 (Sample Program 1)

	Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
												Identify and explore digital systems – F.2.1							
												Our computers							
Year 1	Semester 1					Recognise and explore patterns – 1.1.1													
						Finding patterns													
	Semester 2					Present data using digital systems – 1.2.1													
						Sharing data													
												Create and organise ideas – 2.1.1							
												Sharing our work							
Year 2	Semester 2				Represent a sequence of steps and decisions – 2.2.1							Explore how to safely use information systems – 2.2.2							
					Programming a partner							Devices in our lives							
	Week	1	2	3	4	5	6	7	8		10	11	12	13	14	15	16	17	18

* Based on 1 hour of teaching time per week

Foundation, Semester 1 – No Digital Technologies

Semester 2, 4 weeks – Digital Systems

Year 1, Semester 1 and 2, Data and Information

Year 2, Semester 1, Data and Information

Year 2, Semester 2, Creating Digital Solutions

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Curriculum Planning Template F-2

Victorian Curriculum
Foundation–10

Curriculum Planning Template: Digital Technologies Foundation to 2 (Sample Program 1)

Instruction: List the title of the unit of work in the first column and then tick the check box of the content description/s addressed by it, which can be done electronically. Once completed, fill out the 'Assessments' table.
For detailed notes regarding the purpose of this template and further instructions for completion, refer here

Strand	Digital Systems		Data and Information				Creating Digital Solutions			
	Identify and explore digital systems (hardware and software components) for a purpose (VCDTDS013)		Recognise and explore patterns in data and represent data as pictures, symbols and diagrams (VCDTDI014)		Collect, explore and sort data, and use digital systems to present the data creatively (VCDTDI015)		Independently and with others create and organise ideas and information using information systems, and share these with known people in safe online environments (VCDTDI016)		Follow, describe and represent a sequence of steps and decisions (algorithms) needed to solve simple problems (VCDTCD017)		Explore how people safely use common information systems to meet information, communication and recreation needs (VCDTCD018)	
	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #
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Pr	☐		☐		☐		☐		☐		☑	4
Devices in our lives	Semester 2 / Grade 2											

Sharing our work — Sending evidence of learning to family members — 4
Programming a partner
Devices in our lives

Sequence of Lessons/Units of Work. Semester to be taught and assessed in

Strands and content descriptions mapped against achievement standards

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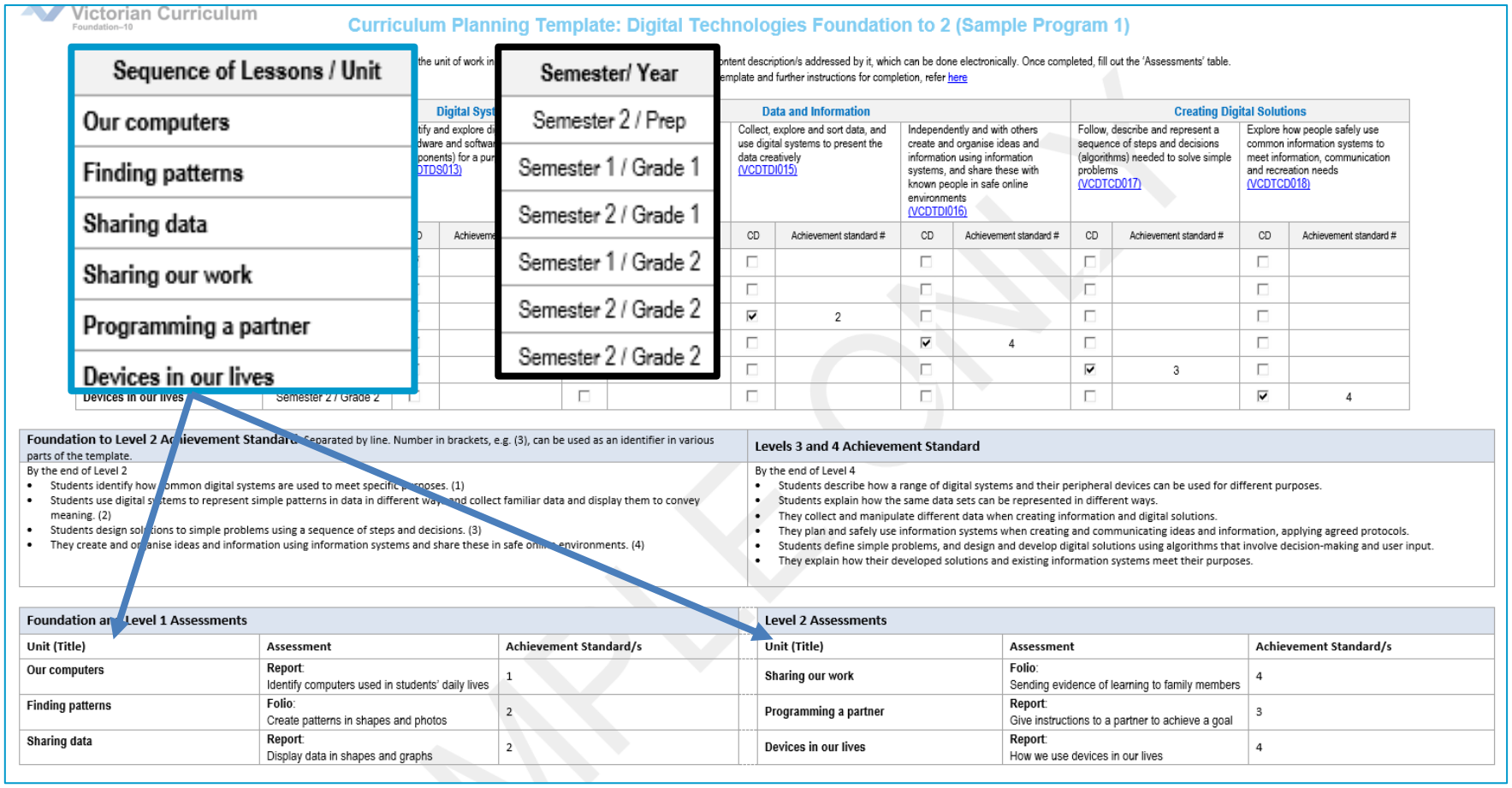
Curriculum Planning Template F-2



Victorian Curriculum
Foundation–10

Curriculum Planning Template: Digital Technologies Foundation to 2 (Sample Program 1)

Sequence of Lessons / Unit
Our computers
Finding patterns
Sharing data
Sharing our work
Programming a partner
Devices in our lives

Semester/ Year
Semester 2 / Prep
Semester 1 / Grade 1
Semester 2 / Grade 1
Semester 1 / Grade 2
Semester 2 / Grade 2
Semester 2 / Grade 2

the unit of work in … ontent description/s addressed by it, which can be done electronically. Once completed, fill out the 'Assessments' table.
emplate and further instructions for completion, refer here

		Digital Sys…				Data and Information				Creating Digital Solutions			
		tify and explore di… dware and softwa… ponents) for a pur… DTDS013)				Collect, explore and sort data, and use digital systems to present the data creatively (VCDTDI015)		Independently and with others create and organise ideas and information using information systems, and share these with known people in safe online environments (VCDTDI016)		Follow, describe and represent a sequence of steps and decisions (algorithms) needed to solve simple problems (VCDTCD017)		Explore how people safely use common information systems to meet information, communication and recreation needs (VCDTCD018)	
		CD	Achieveme…			CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #
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		☐				☐		☑	4	☐		☐	
		☐				☐		☐		☑	3	☐	
Devices in our lives	Semester 2 / Grade 2	☐		☐		☐		☐		☐		☑	4

Foundation to Level 2 Achievement Standard Separated by line. Number in brackets, e.g. (3), can be used as an identifier in various parts of the template.

By the end of Level 2
- Students identify how common digital systems are used to meet specific purposes. (1)
- Students use digital systems to represent simple patterns in data in different ways and collect familiar data and display them to convey meaning. (2)
- Students design solutions to simple problems using a sequence of steps and decisions. (3)
- They create and organise ideas and information using information systems and share these in safe online environments. (4)

Levels 3 and 4 Achievement Standard

By the end of Level 4
- Students describe how a range of digital systems and their peripheral devices can be used for different purposes.
- Students explain how the same data sets can be represented in different ways.
- They collect and manipulate different data when creating information and digital solutions.
- They plan and safely use information systems when creating and communicating ideas and information, applying agreed protocols.
- Students define simple problems, and design and develop digital solutions using algorithms that involve decision-making and user input.
- They explain how their developed solutions and existing information systems meet their purposes.

Foundation and Level 1 Assessments

Unit (Title)	Assessment	Achievement Standard/s
Our computers	**Report**: Identify computers used in students' daily lives	1
Finding patterns	**Folio**: Create patterns in shapes and photos	2
Sharing data	**Report**: Display data in shapes and graphs	2

Level 2 Assessments

Unit (Title)	Assessment	Achievement Standard/s
Sharing our work	**Folio**: Sending evidence of learning to family members	4
Programming a partner	**Report**: Give instructions to a partner to achieve a goal	3
Devices in our lives	**Report**: How we use devices in our lives	4

http://www.vcaa.vic.edu.au/Pages/foundation10/viccurriculum/digitech/teachresources.aspx

Curriculum Planning Template F-2

Digital Systems		Data and Information						Creating Digital Solutions			
Identify and explore digital systems (hardware and software components) for a purpose (VCDTDS013)		Recognise and explore patterns in data and represent data as pictures, symbols and diagrams (VCDTDI014)		Collect, explore and sort data, and use digital systems to present the data creatively (VCDTDI015)		Independently and with others create and organise ideas and information using information systems, and share these with known people in safe online environments (VCDTDI016)		Follow, describe and represent a sequence of steps and decisions (algorithms) needed to solve simple problems (VCDTCD017)		Explore how people safely use common information systems to meet information, communication and recreation needs (VCDTCD018)	
CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #
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☐		☐		☐		☐		☐		☑	4

Foundation and Level 1 Assessments			Level 2 Assessments		
Unit (Title)	**Assessment**	**Achievement Standard/s**	**Unit (Title)**	**Assessment**	**Achievement Standard/s**
Our computers	**Report**: Identify computers used in students' daily lives	1	**Sharing our work**	**Folio**: Sending evidence of learning to family members	4
Finding patterns	**Folio**: Create patterns in shapes and photos	2	**Programming a partner**	**Report**: Give instructions to a partner to achieve a goal	3
Sharing data	**Report**: Display data in shapes and graphs	2	**Devices in our lives**	**Report**: How we use devices in our lives	4

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Curriculum Area Plan Levels 9-10

Curriculum Area Plan: Digital Technologies - Years 9 and 10 (Sample Program 3)

	Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Year 9	Semester 1	Role of hardware, software, data and networks - 9.1.1					Data compression - 9.1.2					Techniques for acquiring data - 9.1.3				Analyse and visualise data - 9.1.4			
		Network Theory					Image Editing					Community Project a. Research and data collection				Community Project b. Creating posters			
	Semester 2																		
Year 10	Semester 1	Manage and collaborate - 10.1.1		Decompose problems - 10.1.2		Design user experience - 10.1.3		Design algorithms - 10.1.4		Develop modular programs - 10.1.5								Evaluate solutions - 10.1.6	
		Programming Project a. Project management		Programming Project b. Analysis - Requirements		Programming Project c. Design and development												Programming Project d. Evaluation	
	Semester 2																		
	Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

* Based on 3 x 45 minutes teaching time per week

Key	Digital Systems	Data and Information	Creating Digital Solutions	Topic, level, semester, sequence

Based on 3 x 45 minutes teaching time per week

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Curriculum Planning Template 9-10

Sequence of Lessons / Unit	Semester/ Year
Network Theory	Semester 1 / Year 9
Imaging Editing	Semester 1 / Year 9
Community Project	
a. Research and data collection	Semester 1 / Year 9
b. Creating posters	Semester 1 / Year 9
Programming Project	
a. Project management	Semester 1 / Year 10
b. Analysis - Requirements	Semester 1 / Year 10
c. Design & development	Semester 1 / Year 10
d. Evaluation	Semester 1 / Year 10

Victorian Curriculum

iculum Planning Template: Digital Technologies 9-10 (Sample Program 3)

unit of work in the first column and then tick the check box of the content description/s addressed by it, which can be done electronically. Once completed, fill out the 'Assessments' table.
For detailed notes regarding the purpose of this template and further instructions for completion, refer here

	Data and Information								Creating Digital Solutions									
	lyse simple pression of data and content data are arated from entation (VCDTDI046)		Develop techniques for acquiring, storing and validating quantitative and qualitative data from a range of sources, considering privacy and security requirements (VCDTDI047)		Analyse and visualise data to create information and address complex problems, and model processes, entities and their relationships using structured data (VCDTDI048)		Manage and collaboratively create interactive solutions for sharing ideas and information online, taking into account social contexts and legal responsibilities (VCDTDI049)		Define and decompose real-world problems precisely, taking into account functional and non-functional requirements and including interviewing stakeholders to identify needs (VCDTCD050)		Design the user experience of a digital system, evaluating alternative designs against criteria including functionality, accessibility, usability and aesthetics (VCDTCD051)		Design algorithms represented diagrammatically and in structured English and validate algorithms and programs through tracing and test cases (VCDTCD052)		Develop modular programs, applying selected algorithms and data structures including using an object-oriented programming language (VCDTCD053)		Evaluate critically how well student-developed solutions and existing information systems and policies take account of future risks and sustainability and provide opportunities for innovation (VCDTCD054)	
	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #
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																☑	6	☐	
																☐		☑	7

Level 9 Assessments

Unit (Title)	Assessment	Achievement Standard/s
Network Theory	Case study and network diagram using MS Visio	1
Imaging Editing	Written report and series of manipulated images demonstrating an understanding of compression	2
Community Project a. Research and data col		
Community Project b. Creating posters		

Level 10 Assessments

Unit (Title)	Assessment	Achievement Standard/s
Programming Project a. Project management	Project management plan - Gantt chart and evidence of online collaboration	4
Programming Project b. Analysis - Requirements	Written Report - Discussion of software solution requirements	5
Programming Project c. Design and development	Mock-ups, algorithms, testing table and software solution	6
Programming Project d. Evaluation	Written report - Student evaluation of how software solution met requirements	7

http://www.vcaa.vic.edu.au/Pages/foundation10/viccurriculum/digitech/teachresources.aspx

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VICTORIA State Government

Unpacking the Content Descriptions

Curriculum Planning Template F-2

Victorian Curriculum
Foundation–10

Curriculum Planning Template: Digital Technologies Foundation to 2 (Sample Program 1)

Instruction: List the title of the unit of work in the first column and then tick the check box of the content description/s addressed by it, which can be done electronically. Once completed, fill out the 'Assessments' table.
For detailed notes regarding the purpose of this template and further instructions for completion, refer here

	Strand	Digital Systems		Data and Information						Creating Digital Solutions			
	Content Description	Identify and explore digital systems (hardware and software components) for a purpose (VCDTDS013)		Recognise and explore patterns in data and represent data as pictures, symbols and diagrams (VCDTDI014)		Collect, explore and sort data, and use digital systems to present the data creatively (VCDTDI015)		Independently and with others create and organise ideas and information using information systems, and share these with known people in safe online environments (VCDTDI016)		Follow, describe and represent a sequence of steps and decisions (algorithms) needed to solve simple problems (VCDTCD017)		Explore how people safely use common information systems to meet information, communication and recreation needs (VCDTCD018)	
Sequence of Lessons / Unit	**Semester/ Year**	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #
Our computers	Semester 2 / Prep	☑	1	☐		☐		☐		☐		☐	
Finding patterns	Semester 1 / Grade 1	☐		☑	2	☐		☐		☐		☐	
Sharing data	Semester 2 / Grade 1	☐		☐		☑	2	☐		☐		☐	
Sharing our work	Semester 1 / Grade 2	☐		☐		☐		☑	4	☐		☐	
Programming a partner	Semester 2 / Grade 2	☐		☐		☐		☐		☑	3	☐	
Devices in our lives	Semester 2 / Grade 2	☐		☐		☐		☐		☐		☑	4

Foundation to Level 2 Achievement Standard- Separated by line. Number in brackets, e.g. (3), can be used as an identifier in various parts of the template.	**Levels 3 and 4 Achievement Standard**
By the end of Level 2 • Students identify how common digital systems are used to meet specific purposes. (1) • Students use digital systems to represent simple patterns in data in different ways and collect familiar data and display them to convey meaning. (2) • Students design solutions to simple problems using a sequence of steps and decisions. (3) • They create and organise ideas and information using information systems and share these in safe online environments. (4)	By the end of Level 4 • Students describe how a range of digital systems and their peripheral devices can be used for different purposes. • Students explain how the same data sets can be represented in different ways. • They collect and manipulate different data when creating information and digital solutions. • They plan and safely use information systems when creating and communicating ideas and information, applying agreed protocols. • Students define simple problems, and design and develop digital solutions using algorithms that involve decision-making and user input. • They explain how their developed solutions and existing information systems meet their purposes.

Foundation and Level 1 Assessments		
Unit (Title)	**Assessment**	**Achievement Standard/s**
Our computers	**Report**: Identify computers used in students' daily lives	1
Finding patterns	**Folio**: Create patterns in shapes and photos	2
Sharing data	**Report**: Display data in shapes and graphs	2

Level 2 Assessments		
Unit (Title)	**Assessment**	**Achievement Standard/s**
Sharing our work	**Folio**: Sending evidence of learning to family members	4
Programming a partner	**Report**: Give instructions to a partner to achieve a goal	3
Devices in our lives	**Report**: How we use devices in our lives	4

Achievement Standard: Students identify how common digital systems are used for a purpose

http://www.vcaa.vic.edu.au/Pages/foundation10/viccurriculum/digitech/teachresources.aspx

VICTORIAN CURRICULUM AND ASSESSMENT AUTHORITY

VICTORIA State Government

Curriculum Area Plan F-2

Curriculum Area Plan: Digital Technologies - Prep to Year 2 (Sample Program 1)

4 sessions

	Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Year F	Semester 1																		
	Semester 2											Identify and explore digital systems – F.2.1							
												Our computers							
Year 1	Semester 1					Recognise and explore patterns – 1.1.1													
						Finding patterns													
	Semester 2					Present data using digital systems – 1.2.1													
						Sharing data													
Year 2	Semester 1											Create and organise ideas – 2.1.1							
												Sharing our work							
	Semester 2				Represent a sequence of steps and decisions – 2.2.1							Explore how to safely use information systems – 2.2.2							
					Programming a partner							Devices in our lives							
	Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

* Based on 1 hour of teaching time per week

Key	Digital Systems	Data and Information	Creating Digital Solutions	Topic, level, semester, sequence

http://www.vcaa.vic.edu.au/Pages/foundation10/viccurriculum/digitech/teachresources.aspx

Unpacking the Content Descriptions

YR/LvL	Unpacking the Content Descriptions
F-2	Unpacking_Digital_Technologies_Content_Descriptions (docx - 366.61kb)
3-4	Unpacking_Digital_Technologies_Content_Descriptions (docx - 367.16kb)
5-6	Unpacking_Digital_Technologies_Content_Descriptions (docx - 365.02kb)
7-8	Unpacking_Digital_Technologies_Content_Descriptions (docx - 367.71kb)
9-10	Unpacking_Digital_Technologies_Content_Descriptions (docx - 369.45kb)

http://www.vcaa.vic.edu.au/Pages/foundation10/viccurriculum/digitech/teachresources.aspx

Unpacking the Content Descriptions

VICTORIAN CURRICULUM AND ASSESSMENT AUTHORITY

FOUNDATION TO LEVEL 2

Digital Technologies: Unpacking the Content Descriptions

Strand	Digital Systems	Sample activities
Content Description	Identify and explore digital systems (hardware and software components) for a purpose	• identifying common digital systems in the classroom and their purpose, for example laptops, tablets, interactive whiteboards • identifying common digital systems at home and their purpose, for example smart phones, desktop computers, tablets and smart TVs • linking identified digital systems with an identified purpose, for example using a laptop to word process a story or using a tablet to take photographs • identifying that inputs are a way of entering data into a digital system, for example keyboard, mouse, touch pad, touch screen, buttons on a robotic device • identifying that outputs are a way for a digital system to represent data to the user, for example a monitor for displaying information and speakers to provide sound • using a digital system to take photographs and inserting them into a document • creating a multimedia solution that includes text, images, audio and video
Related extract from Achievement Standard	Students identify how common digital systems are used to meet specific purposes.	
Suggested focus	Lessons may focus on: • types of common digital systems and their purpose • basic functions of inputs and outputs • using digital systems to download and store images • learning to create an audio recording while exploring hardware and software • learning to create a video recording while exploring hardware and software • learning to create a photo story using photos and music	

http://www.vcaa.vic.edu.au/Pages/foundation10/viccurriculum/digitech/teachresources.aspx

Developing a Unit of Work – F-2

Lesson 1:
Students identify common digital systems in their classroom and their purpose, for example, laptops, tablets, interactive devices.

Lesson 2:
Linking identified digital systems with an identified purpose, for example using a laptop to word process a story or using a tablet to take a photograph

Lessons 3:
Identifying that inputs are a way of entering data into a digital system, for example, keyboard, mouse, touchpad screen, buttons on a robotic device

Lesson 4:
Identifying that outputs are a way for digital systems to represent data to the user, for example, a monitor for displaying information, and speakers to provide sound

Sample Assessment Activity F-2

Report – Identify how computers are used in students' daily lives

Foundation and Level 1 Assessments	
Unit (Title)	**Assessment**
Our computers	**Report**: Identify computers used in students' daily lives

Achievement Standard: Students identify how common digital systems are used for a purpose

NOTE: Although students may be in Foundation, Year 1 or Year 2, if they achieved the standard they would be **AT LEVEL 2.**

Curriculum Area Plan Levels 9-10

Curriculum Area Plan: Digital Technologies - Years 9 and 10 (Sample Program 1)

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Semester 1	Role of hardware, software, data and networks – 9.1.1			Data compression – 9.1.2	Techniques for acquiring data – 9.1.3	Analyse and visualise data – 9.1.4	Manage and collaborate – 9.1.5			Decompose problems – 9.1.6	Design user experience – 9.1.7	Design algorithms – 9.1.8	Develop modular programs – 9.1.9					Evaluate solutions – 9.1.10
	Internet of Things			Creating web sites				Spreadsheets		Python programming								Programming evaluation
Semester 2																		
Semester 1																		
Semester 2																		
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

* Based on 3 x 45 minutes teaching time per week

Key: Digital Systems | Data and Information | Creating Digital Solutions | Topic, level, semester, sequence

Based on 3 x 45 minutes teaching time per week

http://www.vcaa.vic.edu.au/Pages/foundation10/viccurriculum/digitech/teachresources.aspx

Curriculum Planning Template 9-10

Level 9 Assessments		
Unit (Title)	**Assessment**	**Achievement Standard/s**
Python programming	Folio/Test: Submission of programming exercises and a practical test.	5, 6
P… …valuation	Report: Discussion as t… …ogramming solution met requ… …ts.	7

Students would be assessed as being **AT LEVEL 10** or **WORKING TOWARDS** Level 10

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Unpacking the Content Descriptions

Levels 9-10

VICTORIAN CURRICULUM AND ASSESSMENT AUTHORITY

LEVEL 9 - 10

Digital Technologies: Unpacking the Content Descriptions

Strand	Creating Digital Solutions	Sample activities
Content Description	Develop modular programs, applying selected algorithms and data structures including using an object-oriented programming language	• reviewing general-purpose programming languages • watching a video explanation of how object-orientated programming is used in games and software applications • playing a favourite game and identifying the objects, events and properties and explaining how an object's behaviour is affected by events and actions • developing different algorithms to meet the requirements and select the most appropriate algorithm • describing a range of programming features, such as procedures, functions and methods • creating programs that use objects, events, classes, methods and a range of properties • testing the functionality of the program
Related extract from Achievement Standard	They design and evaluate user experiences and algorithms, and develop and test modular programs, including an object-oriented program.	
Suggested focus	Lessons may focus on: • review of general-purpose programming language features and functions from Levels 7 and 8 • introduction to key terminology and concepts of object-orientated programming • introduction to objects and properties, events, classes and methods • programming exercises and activities • debugging programs (troubleshooting) • testing code through the use of testing tables	

http://www.vcaa.vic.edu.au/Pages/foundation10/viccurriculum/digitech/teachresources.aspx

Developing a Unit of Work Levels 9-10

- Reviewing general-purpose programming languages
- Developing different algorithms to meet the requirements and select the most appropriate algorithm
- Creating objects that use objects, events, classes, methods and a range of properties

Delivered as part of the Python Programming Unit of work to meet the Achievement Standard

- *They design and evaluate user experiences and algorithms, and develop and test modular programs, including an object-oriented program*

Conclusion

- There is no one CORRECT way to deliver the Digital Technologies Curriculum
- Your school context will be the most influential factor in how it is planned and delivered
- The Ways of Thinking and Key Concepts should be embedded in learning activities
- Be prepared to differentiate – your students will not all be at the same level
- The VCAA resources used in this presentation are examples, modify them as needed to suit your circumstances

Resources

VCAA Digital Technologies resources

Victorian Curriculum website

http://victoriancurriculum.vcaa.vic.edu.au/

VCAA Digital Technologies resources

http://http://www.vcaa.vic.edu.au/Pages/foundation10/viccurriculum/digitech/teachresources.aspx