



## **Computing Curriculum 2020**

**Enquire Learning Trust**  
**Ever Curious, Always Learning**

## Enquire Learning Trust - Computing Curriculum

At The Enquire Learning Trust, we believe that it is vital for all our pupils to learn from and about Computing and Technology, so that they can understand the world around them. Through teaching our computing curriculum, we aim to equip our children to participate in a rapidly changing world where work and leisure activities are increasingly transformed by technology. It is our intention to enable children to find, explore, analyse, exchange and present information as well as having the skills to manipulate, develop and interpret different forms of technology in an ever-changing world.

In such a fast-moving curriculum, we are constantly looking at new ways of delivering relevant and exciting activities, while still delivering the fundamental skills needed for computing. Using technology safely and responsibly is a main priority and ensuring all are able to use the internet and equipment appropriately is of paramount importance. We encourage our pupils to make links across the curriculum, the world and our local community, to reflect on their own experiences, which are designed in our 3D curriculum, allowing horizontal and vertical links with previous year groups.

The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

### Aims

The curriculum for computing aims to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology.

## Key stage 1

Pupils should be taught to:

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school
- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

## Key stage 2

Pupils should be taught to:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

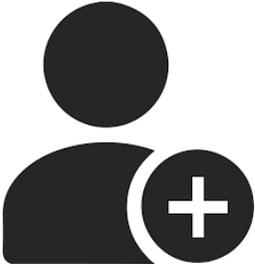
## Year group curriculum overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2			
<b>Year 1</b>	E-safety: Using the internet safely	Digital Literacy & E-safety: using a computer/device. Typing training.	E-safety: Using the internet safely	Coding with Beebots	Digital Literacy: bug hunters	Digital Literacy: Potty painters	Coding: Scratch Jnr - introduction and fundamentals		
<b>Year 2</b>	E-safety: Staying safe on the internet – Jessie and Friends. <b>Topic related activities throughout the year.</b>	Digital Literacy & E-safety: Using search. Typing training.	E-safety: Appropriate behaviour online.	Coding: Scratch Jnr - introduction and fundamentals	Digital Literacy - using a computer. What is the Internet.	Digital Literacy: Introduction to photo editing.	E-safety: Staying safe on the internet.	Digital Literacy: taking and using photos	Coding: Scratch Jnr - introduction and fundamentals
<b>Topic related activities throughout the year.</b>									
<b>Year 3</b>	E-safety: Google Share with care <b>Topic related activities throughout the year.</b>	Digital Literacy & E-safety: using a computer/device.	Word processing PowerPoint	E-safety: Trust	Digital Literacy: Social media and evaluating search results	Coding: Animations - Tynker	Coding: Loops, debugging and events.	Coding: If statements. HTML App Coding	
<b>Topic related activities throughout the year.</b>									
<b>Year 4</b>	E-safety: Google Don't fall for fake <b>Topic related activities throughout the year.</b>	Digital Literacy: Research and develop a topic	Word processing PowerPoint	Photo Editing - Paint.Net: Editing functions	Coding: Algorithms - Tynker	Digital Literacy: Stop motion animation	Coding: Conditions, Functions and App design		
<b>Topic related activities throughout the year.</b>									
<b>Year 5</b>	E-safety: Google Secure your secrets <b>Topic related activities throughout the year.</b>	Digital Literacy: Plan an event using shared documents	Digital Literacy: Spreadsheets	E-safety: Cyberbullying	Coding: Scratch – Commands, Debugging	Coding: Conditional Code, While loops and Logic.	Digital Literacy: Animation through varied apps and websites	Digital Literacy: Website creation. SharePoint	Coding: Algorithms. Game creation
<b>Topic related activities throughout the year.</b>									
<b>Year 6</b>	E-safety: Google It's cool to be kind Interland's Kind Kingdom	Digital Literacy: 3D modelling using Google Sketchup.	E-safety: Why is Social Media Free? Fake News in real life.	Coding: Use variables, coding with variables	Coding: Use of types and initialisation in code, parameters and problem solving skills	Digital Literacy: Childnet video competition	Coding: The use of Arrays in coding, visualise data and coding concepts		

## Software and Apps used

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>iPad Apps</p> 	<p>Scratch Jr</p>  <p>Beebots app</p>  <p>Adobe Spark</p>  <p>Apple Photos</p>  <p>Book Creator</p> 	<p>Scratch Jr</p>  <p>Piccollage App</p>  <p>Photo Editor – Axiem</p> 	<p>Tynker</p>  <p>CodeSpark Academy</p>  <p>iMovie</p>  <p>iOS Camera</p>  <p>Keynote</p> 	<p>Tynker</p>  <p>Keynote</p>  <p>iMovie</p>  <p>Pages</p> 	<p>Swift Playground</p> 	<p>Swift Playground</p>  <p>Kahoot</p> 

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p><b>Windows Software</b></p> 		<p>Paint.net</p> 	<p>Microsoft Word</p>  <p>Microsoft PowerPoint</p> 	<p>Paint.net</p>  <p>Microsoft Word</p>  <p>Microsoft PowerPoint</p> 	<p>Microsoft Word</p>  <p>Microsoft Excel</p>  <p>Microsoft Publisher</p>  <p>Scratch desktop (or online)</p>  <p>Microsoft PowerPoint</p>  <p>Pivot Animator</p> 	<p>Scratch desktop (or online)</p>  <p>Mozilla X-Ray</p> 

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p><b>Online Services requiring account creation (Free)</b></p> 	<p>Adobe Account for Spark</p> 					<p>SketchUp (Requires class Google account)</p> 
<p><b>Online services needing Office 365 login (Pupil and teacher)</b></p> 					<p>Microsoft SharePoint</p>  <p>Microsoft Word online</p>  <p>Microsoft Excel online</p>  <p>Microsoft Publisher online</p> 	

# Computing

## Year 1

## Learning intentions

Year 1	
E-safety	Uses technology safely
	Keeps personal information private
	Recognises common uses of information technology beyond school
Computing / Digital Literacy	Uses technology purposefully to create digital content
	Uses technology purposefully to store digital content
	Uses technology purposefully to retrieve digital content
Coding	Understands what algorithms are
	Creates simple programs

## Coding Toolkit

Toolkits are to help guide what should be included in a coding project and to aid assessment.

Toolkits for the different genres can be found in Resources folder.

A sample assessment document can be found in Resources folder.

Toolkits can be introduced in the same way that a toolkit or success criteria might be in English (Talk for Writing) and developed in the series of lessons outlined in the planning.

Particular focus should be placed on use of full sentence answers (including correct vocabulary), success in achieving goals and use of the toolkit.

## Computing Vocabulary



### Algorithm

An algorithm is a sequence of instructions or a set of rules to get something done. Please note: a piece of code is not an algorithm.

### Decomposition

The process of breaking down a problem into smaller manageable parts is known as decomposition. Decomposition helps us solve complex problems and manage large projects.

### Sequences

This means that the computer will run your code in order, one line at a time from the top to the bottom of your program. It will start at the first block of code, then execute the next block of code then the next and so on until it reaches the last code block of your program.

### Repetition

Sometimes you want the computer to execute the same lines of code several times. This is done using a loop. There are three types of loops: Forever loops, repeat n time loops and repeat until loops. That's handy as it enables you not to have to copy the same blocks of code many times.

You may need to register and login to the Barefoot website for these resources. It's quick and free to do.

**Mastery example questions like maths**

**Planning Links**

What happens if you change..?

If you change the order of the blocks, does it have the same result?

Can you get the same result with a different type of repeat block?

How do you make the conditional false?

Year 1- Autumn 1:

Year 1- Autumn 2:

Year 1 – Spring 1:

Year 1 – Summer 1:

**App or software used within the year**

Scratch Jr (iPad)  
Beebot manipulatives or Beebot Emulator Online  
Beebot App:

Autumn 1	1 & 2	3	4	5	6	7	8
<b>Topic</b>	E-safety:	E-safety:	E-safety:	E-safety:	E-safety:	E-safety:	E-safety:
<b>Lesson</b>	Going Places Safely	Making the right decision.	Critical thinking and online reliability	A-B-C Searching Comparisons of topic-based images using different child-friendly search engines.	My Creative Work	Become an Internet Protector That 'uh-oh' feeling.	I have the right to say NO
<b>LO</b>	To discuss how to stay safe online	To use the internet safely	To use the internet safely	To search the internet for suitable pictures	To describe how to take ownership of work online	To discuss how to stay safe online-Avatar and profile safety	To discuss how to stay safe online- keeping stuff safe
<b>Planning</b>	<a href="#">Childnet: Smartie the penguin.</a> <a href="#">Planning link:</a>	DigiDiuck's Big Decision <a href="#">Planning Link:</a>	Digiduck's Famous Friend: <a href="#">Planning Link:</a>	<a href="#">Swiggle Search Engine</a> <a href="#">Google Safe Search:</a>	<a href="#">Link</a>	Childnet-Lee and Kim. Lesson 1 <a href="#">Planning Link:</a>	Childnet-Lee and Kim. Lesson 2 <a href="#">Planning Link:</a>

Autumn 2	1	2	3	4	5	6	7	8
<b>Topic</b>	Digital Literacy: using a computer	Digital Literacy: using a computer	Digital Literacy: using a computer	Digital Literacy: using a computer	Digital Literacy: using a computer	Digital Literacy: using a computer	Digital Literacy: using a computer	Digital Literacy: using a computer
<b>Lesson</b>	How a supermarket works	How a library works	Getting started in the computer lab	Your digital footprint	My robotic friends	Using a device	Using a device to touch type	Using a device to touch type
<b>LO</b>	To identify computers in everyday lives	To discuss how computers make our lives easier	To follow the rules when using computers	To discuss staying safe on and offline	Attend to precision when creating instructions.  Identify and address bugs or errors in sequenced instructions.	To safely use a device	To safely use a device	To safely use a device

<b>Planning</b>	<a href="#">Link</a>	<a href="#">Link</a>	<a href="#">Lesson Plan:</a>	<a href="#">Lesson Plan</a>	<a href="#">Lesson Plan:</a>	This is space for children to practise switching on/off & logging in & typing passwords	<a href="#">BBC Dance Mat Level 1</a>	<a href="#">BBC Dance Mat Level 2</a>
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Spring 1	1	2	3	4	5	6
<b>Topic</b>	E-safety	E-safety	Coding with Beebots	Coding with Beebots	Coding with Beebots	Coding with Beebots
<b>Lesson</b>	Keep It Private	Keep It Private	Playing & Exploring Bee-Bot: How far?	Playing & Exploring Bee-Bot: One Step More	Bee-Bot Trail: Challenge	Bee-Bot's Journey
<b>LO</b>	To keep my information private	To keep my information private	To be able to predict the behaviour of simple programs	To be able to use logical reasoning to predict the behaviour of simple programs	To plan, test and debug simple programs.	To be able to plan and combine a sequence of commands to achieve a specific goal
<b>Planning &amp; Resources</b>	SMART Rules: ARS <a href="#">Planning Link:</a>	SMART Rules: MT <a href="#">Planning Link:</a>	<a href="#">Activity Cards:</a> <a href="#">Barefoot Computing:</a> <a href="#">Resources:</a>			

Spring 2	1	2	3	4	5	6
<b>Topic</b>	Digital Literacy: bug hunters	Digital Literacy: bug hunters	Digital Literacy: bug hunters	Digital Literacy: bug hunters	Digital Literacy: bug hunters	Digital Literacy: bug hunters
<b>Lesson</b>	Introduction to the topic and searching for images	Create an image gallery by holding finger down on image and adding to photos.	Organise images into a named folder on the iPad	Rename files to help organise them	Organise images into groups/fields: legs, shell can it fly? etc.	Create a presentation of organised images using suitable iPad software e.g. Piccollage. Add text labels.
<b>LO</b>	To use Google search to find images	To save images from the internet	To create and rename folders	To rename files	To move files	To present my image gallery



# Computing

## Year 2

## Learning Intentions

Year 2	
E-safety	Uses technology respectfully
	Identifies where to go for help and support when they have concerns about content or contact on the internet or other online technologies
Computing / Digital Literacy	Uses technology purposefully to organise digital content
	Uses technology purposefully to manipulate digital content
Coding	Understands that algorithms are implemented as programs on digital devices
	Understands that programs execute by following precise and unambiguous instructions
	Debugs simple programs
	Uses logical reasoning to predict the behaviour of simple programs
App Specific	To learn the basics of photo editing and how images are layered.

## Coding Toolkit

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Particular focus should be placed on use of full sentence answers (including correct vocabulary), success in achieving goals and use of the toolkit.

## Computing Vocabulary



### Algorithm

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Please note: a piece of code is not an algorithm.

### Decomposition

The process of breaking down a problem into smaller manageable parts is known as decomposition. Decomposition helps us solve complex problems and manage large projects.

### Sequences

This means that the computer will run your code in order, one line at a time from the top to the bottom of your program. It will start at the first block of code, then execute the next block of code then the next and so on until it reaches the last code block of your program.

### Repetition

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Mastery example questions like maths	Exemplar lesson and planning material
<div data-bbox="85 209 405 576" style="background-color: blue; color: white; padding: 10px; border: 1px solid black;">           What happens if you change..?         </div> <div data-bbox="436 209 757 600" style="background-color: yellow; padding: 10px; border: 1px solid black;">           If you change the order of the blocks, does it have the same result?         </div> <div data-bbox="85 603 405 994" style="background-color: black; color: white; padding: 10px; border: 1px solid black;">           Can you get the same result with a different type of repeat block?         </div> <div data-bbox="436 628 757 922" style="background-color: lightgray; padding: 10px; border: 1px solid black;">           How do you make the conditional false?         </div>	<p>Exemplar complete unit, including planning, scaffolding, questioning and assessment</p> <p>Lesson plan for a similar maths game, including slides (requires registration)</p> <p><a href="#">Scratch Jnr Slides from Twinkl</a></p> <p>Example slides using PRIMM in resource folder.</p> <p><a href="#">Year 2- Autumn 1:</a></p> <p><a href="#">Year 2- Autumn 2:</a></p> <p><a href="#">Year 2 – Spring 1:</a></p> <p><a href="#">Year 2- Summer 1:</a></p>
<b>App or software used within the year</b>	
Scratch Jr (iPad) Piccollage (iPad) Paint.net (Windows 10)	

Autumn 1	1 & 2	3	4	5	6	7	8
<b>Topic</b>	E-safety:	E-safety:	E-safety:	E-safety:	E-safety:	E-safety:	E-safety:
<b>Lesson</b>	Jessie and Friends Episode 1 –Watching Videos	Jessie and Friends Episode 2- Sharing Pictures	Jessie and Friends Episode 2- Sharing Pictures	Jessie and Friends Episode 2- Sharing Pictures	Jessie and Friends Episode 3- Playing Games. Session 1	Jessie and Friends Episode 3- Playing Games. Session 2	I am internet awesome
<b>LO</b>	<p>To use the rules to discuss a story</p> <ul style="list-style-type: none"> <li>• I can explain how something online might make someone feel worried or sad.</li> <li>• I can recognise different feelings.</li> <li>• I can identify up to four adults in my life who can help me if I have a problem online.</li> </ul>	<p>To discuss how to stay safe on the internet.</p> <p>I can explain what might happen if we share a picture.</p>	<p>To use technology safely</p> <p>I can identify the effect of people's actions online and consider ways of keeping others and myself safe.</p>	<p>To describe the rules for staying safe online</p> <p>I recognise that I can be an 'upstander' by choosing not to join in.</p>	<p>To make safe choices when using the internet</p> <p>I can identify what personal information is and the importance of not sharing this. I can recognise different feelings I might encounter online and how my body might tell me something 'doesn't feel right'.</p>	<p>To describe positive behaviour on the internet</p> <ul style="list-style-type: none"> <li>• I can talk about the qualities that make a good friend.</li> <li>• I can identify that people online may not tell the truth.</li> <li>• I can explain the difference between a secret and a surprise.</li> </ul>	An e-safety lesson appropriate for your class
<b>Planning</b>	<a href="#">Resources Link:</a>	<a href="#">Resources Link:</a>					

Autumn 2	1	2	3	4	5	6	7	8
<b>Topic</b>	Digital Literacy: using a computer	Digital Literacy: using a computer	Digital Literacy: using a computer	Digital Literacy: using a computer	Digital Literacy: using a computer	Digital Literacy : Using a computer	Digital Literacy: using a computer	Digital Literacy: using a computer
<b>Lesson</b>	Staying Safer Online	Follow the Digital Trail	Screen Out the Mean	Using Keywords	Sites I Like	Typing – Finger placement.	Typing – Finger placement.	Typing – Finger placement.
<b>LO</b>	To discuss which websites are appropriate for my age	To describe my digital footprint	To treat others with respect online	To use search engines effectively	To rate my favourite websites	To type without looking at the keyboard with correct finger placement	To be able to move our typing hands	To Improve touch typing.
<b>Planning</b>	Digital Literacy & Citizenship <a href="#">Link</a>					<a href="#">Link (Typing Club)</a>	<a href="#">BBC Dance Mat Level 3:</a>	<a href="#">BBC Dance Mat Level 4:</a>

Spring 1	1	2	3	4	5	6
<b>Topic</b>	E-safety	E-safety	Coding: Scratch Jnr - introduction and fundamentals	Coding: Scratch Jnr - introduction and fundamentals	Coding: Scratch Jnr - introduction and fundamentals	Coding: Scratch Jnr - introduction and fundamentals
<b>Lesson</b>	Being Kind Online	Follow the Digital Trail	Grow and Shrink	Time to Move	Repeat	Sounds
<b>LO</b>	Identifying unkind behaviour online. Knowing what to do if someone is unkind online.	What information is appropriate in a digital footprint?	To program a character to grow and shrink.	To use instructions to make characters move at different speeds and distance.	To use a repeat instruction to make a sequence of instructions run more than once and predict the behaviour.	To create programs that play a recorded sound.
<b>Planning</b>	<a href="#">Planning Link:</a>	<a href="#">Planning Link:</a>	<a href="#">LINK</a>			

Spring 2	1	2	3	4	5	6
<b>Topic</b>	Digital Literacy - using a computer	Digital Literacy - using a computer	Digital Literacy - using a computer	Digital Literacy - using a computer	Digital Literacy - Introduction to photo editing. (Halibut Jackson) (PAINT.NET Needed)	Digital Literacy - Introduction to photo editing. (Halibut Jackson)
<b>Lesson</b>	What is the internet?	What is a computer?  How can computers help you learn?	How do people use computers at work?  How can you use the internet?	How do you take care of your personal information?  How can you use the web safely?	The first concepts of photo editing.	To find images from the internet to insert into the Image on separate layers.
<b>LO</b>	To describe how the internet works	To understand that computers are in lots of different inventions.  To identify computers' icons.	To discuss the different uses of computers.	Understanding how we use computers to stay safe while we're online.	To understand photo editing is done in layers. To understand the concept of transparent in photo editing.	To add and edit layers. Copy paste.  Change visibility of layers
<b>Planning &amp; Resources</b>	<a href="#">Link:</a>	<a href="#">What is a computer?</a> <a href="#">How does a computer help you learn?</a>	<a href="#">How do people use computers at work?</a> <a href="#">How can you use the internet?</a>	<a href="#">How do you take care of your personal information?</a>  <a href="#">How can you use the web safely?</a>	<a href="#">PowerPoint – Introduction to photo editing</a>  <a href="#">Video – Introduction of photo editing.</a>	<a href="#">Halibut Jackson template.</a>

Summer 1	1	2	3	4	5	6	7
<b>Topic</b>	E-safety	E-safety	Digital Literacy: taking and using photos	Digital Literacy: taking and using photos	Digital Literacy: taking and using photos	Digital Literacy: taking and using photos	Digital Literacy: taking and using photos
<b>Lesson</b>	Screen out the Mean	Using Keywords	We are photographers	We are photographers	Edit Photos on iPad apps.	We are photographers	We are photographers
<b>LO</b>	Digital rights and a better internet.	Understand that keyword searching is an effective way to locate information on the internet.	To discuss what a camera is and how it works	To take a good photo To save and organise photos. To be able to use sending techniques such as airdrop.	Using a photo edit app	To create a Piccollage using edited photos.	To present my photos (use Airdrop to send to teacher. Either Apple classroom or airdrop Share function)
<b>Planning &amp; Resources</b>	<a href="#">Planning:</a>	<a href="#">Planning:</a>	<a href="#">How a camera works</a> <a href="#">Pinhole Camera</a>	<a href="#">LINK</a> <a href="#">How data is stored</a>	<a href="#">Photography apps</a>	Piccollage app.	Apple Classroom or Airdrop.

Summer 2	1	2	3	4	5	6	7
<b>Topic</b>	Coding: Scratch Jnr - introduction and fundamentals						
<b>Lesson</b>	Walk Along	Show and Hide	Gymnast Cat	Intersection	Big and Small	Messaging	Maze
<b>LO</b>	To animate a sprite	To make sprites appear and disappear	To use a repeat block	To control a sprite's actions	To change the size of a sprite	To use messaging to control a sprite	To create a game
<b>Planning &amp; Resources</b>	<a href="#">LINK</a>						

# Computing

## Year 3

## Learning Intentions

Year 3	
E-safety	Uses technology responsibly
	Identifies a range of ways to report concerns about contact
Computing / Digital Literacy	Uses search technologies effectively
	Uses a variety of software to accomplish given goals
	Collects information
	Designs and creates content
	Presents information
Coding	Writes programs that accomplish specific goals
	Uses sequence in programs
	Works with various forms of input
	Works with various forms of output
App Specific	Use word processing and presentation tools.

## Coding Toolkit

Toolkits are to help guide what should be included in a coding project and to aid assessment.

Toolkits for the different genres can be found in Resources folder.

A sample assessment document can be found in Resources folder.

Toolkits can be introduced in the same way that a toolkit or success criteria might be in English (Talk for Writing) and developed in the series of lessons outlined in the planning.

Particular focus should be placed on use of full sentence answers (including correct vocabulary), success in achieving goals and use of the toolkit.

## Computing Vocabulary



### Algorithm

An algorithm is a sequence of instructions or a set of rules to get something done.

Please note: a piece of code is not an algorithm.

### Decomposition

The process of breaking down a problem into smaller manageable parts is known as decomposition. Decomposition helps us solve complex problems and manage large projects.

### Sequences

This means that the computer will run your code in order, one line at a time from the top to the bottom of your program. It will start at the first block of code, then execute the next block of code then the next and so on until it reaches the last code block of your program.

### Repetition

Sometimes you want the computer to execute the same lines of code several times. This is done using a loop. There are three types of loops: Forever loops, repeat n time loops and repeat until loops. That's handy as it enables you not to have to copy the same blocks of code many times.

### Selection

Sometimes you only want some blocks of code to be run only if a condition is met, otherwise you want the computer to ignore these blocks and jump over them. This is achieved using IF statements. e.g. If a condition is met then blocks contained within the IF block are executed otherwise the computer jumps to the next code blocks without even looking at them.

**You may need to register and login to the Barefoot website for these resources. It's quick and free to do.**

Mastery example questions like maths	Exemplar lesson and planning material
<div data-bbox="85 213 405 472" style="background-color: blue; color: white; padding: 10px; border: 1px solid black; margin-bottom: 10px;">           What happens if you change..?         </div> <div data-bbox="436 213 757 488" style="background-color: yellow; padding: 10px; border: 1px solid black; margin-bottom: 10px;">           If you change the order of the blocks, does it have the same result?         </div> <div data-bbox="85 488 405 762" style="background-color: black; color: white; padding: 10px; border: 1px solid black; margin-bottom: 10px;">           Can you get the same result with a different type of repeat block?         </div> <div data-bbox="436 504 757 715" style="background-color: lightgray; padding: 10px; border: 1px solid black;">           How do you make the conditional false?         </div>	<p>Exemplar complete unit, including planning, scaffolding, questioning and assessment</p> <p>Lesson plan for a similar maths game, including slides (requires registration)</p> <p>Example slides using PRIMM in resource folder.</p> <p>Autumn 2- Digital Literacy:</p> <p>Spring 1:</p> <p>Summer 1:</p>
<p><b>App or software used within the year</b></p>	
<p>Tynker (iPad)            Microsoft Word (Windows 10)            Microsoft PowerPoint (Windows 10)</p>	

Autumn 1	1 & 2	3	4	5	6	7	8
<b>Topic</b>	E-safety: Google: Share with Care <a href="#">Link</a>	E-safety: Google: Share with care	E-safety: Google: Share with care	E-safety: Google: Share with care	E-safety: Google: Share with care	E-safety: Google: Share with care	E-safety:
<b>Lesson</b>	When not to share (1) Whose profile is this, anyway? (2)	How do others see us?	Keeping it private	That's not what I meant!	Frame it	Interland: Mindful Mountain	I am internet awesome
<b>LO</b>	To discuss what information should be kept private. (1)  To identify ways information can be found online about people. (2)	To create a positive online presence	To discuss different levels of privacy	How do we make sure that other people will understand what we mean when we post online?	Thinking about what to keep 'outside the frame' when we post online.	To put my learning into practice	To agree to the Be Internet Awesome pledge & E-safety assembly
<b>Planning</b>	<a href="#">Activity 1:</a> <a href="#">Activity 2:</a> <a href="#">Slideshow 1</a> <a href="#">Slideshow 2</a>	<a href="#">Activity 3:</a> <a href="#">Slideshow 3</a>	<a href="#">Activity 4:</a> <a href="#">Slideshow 4</a>	<a href="#">Activity 5:</a> <a href="#">Slideshow 5</a>	<a href="#">Activity 6:</a> <a href="#">Slideshow 6</a>	<a href="#">Activity 7:</a> <a href="#">Slideshow 7</a>	<a href="#">To read and sign the pledge</a>

Autumn 2	1	2	3	4	5	6	7	8
<b>Topic</b>	Digital Literacy: using a computer	Digital Literacy: using a computer	Digital Literacy: using a computer	Digital Literacy: using a computer	Digital Literacy: using a computer	Word Processing	Word Processing	PowerPoint
<b>Lesson</b>	Powerful Password	My Online Community	Things for Sale	Show Respect Online	Writing Good Emails	Creating a word document	Opening and editing a Word document	Open a PowerPoint, edit and save
<b>LO</b>	To create a safe password	To describe how the internet connects people	To discuss how products are sold online	To describe differences between on/offline communication	To communicate safely and effectively online	To be able to create, edit and save Word document	To locate a previously saved document, edit and resave the document	To be able to create a short PowerPoint to present to peers
<b>Planning</b>	<a href="#">Link</a>	<a href="#">Link</a>	<a href="#">Link</a>	<a href="#">Link</a>	<a href="#">Link</a> <a href="#">BBC Bitesize Video</a>	Topic based		

Spring 1	1	2	3	4	5	6
<b>Topic</b>	E-safety: Trust Me Primary Pack	E-safety: Trust Me Primary Pack	Digital Literacy: Explore a Topic with Research and Collaboration	Digital Literacy: Explore a Topic with Research and Collaboration	Digital Literacy: Explore a Topic with Research and Collaboration	Digital Literacy: Explore a Topic with Research and Collaboration
<b>Lesson</b>	Trust me- lesson 1	Trust- me lesson 2	Real Vs fake news	Checking the story	Exploring Social Media	Selecting Search Activity
<b>LO</b>	Can you trust everything you see/read online?	Can you trust everyone who contacts you online?	To describe the features of a fake news article	Sources and who to trust	Social media, images and data	How search engines select and rank results
<b>Planning</b>	<a href="#">Planning Link:</a>	<a href="#">Planning Link:</a>	<a href="#">Planning Link:</a>	<a href="#">Planning Link:</a> <a href="#">BBC Video:</a>	<a href="#">Planning Link:</a>	<a href="#">Planning Link:</a> <a href="#">BBC Video:</a>

Spring 2	1	2	3	4	5	6
<b>Topic</b>	Coding: Getting Started	Coding: You Can Order It	Coding: You Can Order It	Coding: You Can Step It	Coding: You Can Step It	Coding: You Can Choose
<b>Lesson</b>	Working Wall	Introduction to Sequencing	Introduction to Sequencing	Creating Sequences	Creating Sequences	Flexible Sequencing
<b>LO</b>	To understand the concept of coding, and describe key terms	Describe sequences, construct simple sequences	Describe sequences, construct simple sequences	Build sequences and understand orders	Build sequences and understand orders	Re-ordering steps in a sequence and create flexible sequences
<b>Planning</b>	Getting Started with Code 1 – lesson 0 – Working Wall and Practice	Getting Started with Code 1 – lesson 1 – Story Time and Practice	Getting Started with Code 1 – lesson 1 – App Practice and reflection	Getting Started with Code 1 – lesson 2 – My Crazy Dance	Getting Started with Code 1 – lesson 2 – App Practice and reflection	Getting Started with Code 1 – lesson 3 – Build a Face and App Practice
	NB – Tynker OR Code Spare Academy can be used	Pen and paper, or Notes or Sketches School	NB – Tynker OR Code Spare Academy can be used	Keynote	NB – Tynker OR Code Spare Academy can be used	Keynote or Educreations. NB – Tynker OR Code Spare Academy can be used

Summer 1	1	2	3	4	5	6	7
<b>Topic</b>	E-safety	Coding: You Can Do it over and over	Coding: You Can Do it over and over	Coding: You Can Fix it	Coding: You Can Fix it	Coding: You Can Prompt It	Coding: You Can Prompt It
<b>Lesson</b>	Your Digital Footprint	Loops	Loops	Debugging	Debugging	Events and Actions	Events and Actions
<b>LO</b>	Leaving a positive Digital Footprint behind you	Understand what a loop is, coding with loops	Understand what a loop is, coding with loops	Understand basic debugging	Understand basic debugging	Understand events and actions	Understand events and actions
<b>Planning</b>	<a href="#">Planning Link:</a>	Getting Started with Code 1 – lesson 4 – Body Percussion	Getting Started with Code 1 – lesson 4 – App Practice, apply skills and reflection	Getting Started with code 1 – Lesson 5 – Robot Fun	Getting Started with code 1 – Lesson 5 – App Practice, apply skills and reflection	Getting Started with Code 1 – Lesson 6 – Robot Remote Control	Getting Started with Code 1 – Lesson 6 – App Practice apply skills and reflection
		Keynote	NB – Tynker OR Code Spare Academy can be used	Lesson Resources Printed	NB – Tynker OR Code Spare Academy can be used	Lesson Resources Printed	NB – Tynker OR Code Spare Academy can be used

Summer 2	1	2	3	4	5	6	7
<b>Topic</b>	Coding: You Can if you Follow the Rules	Coding: You Can if you Follow the Rules	Coding: You Can Solve it	Coding: You Can Solve it	Coding Phone Apps	Coding Phone Apps	Coding Phone Apps
<b>Lesson</b>	'If' Statements	'If' Statements	Algorithms	Algorithms	HTML Code introduction Bitbox Food Fight	HTML Code introduction Bitbox Dancin' Hal	HTML Code introduction Bitbox BlockCraft
<b>LO</b>	Understanding basic conditions	Understanding basic conditions	Create a simple algorithm	Create a simple algorithm	To introduce HTML coding. To show how phone/tablet apps are coded.	To use HTML code to show how phone/tablet apps are coded.	To introduce HTML coding. To show how phone/tablet apps are coded.

<b>Planning</b>	Getting Started with Code 1 – Lesson 7 – Explain a Game	Getting Started with Code 1 – Lesson 7 – App Practice, apply skills and reflection	Getting Started with Code 1 – Lesson 8 – Solve the maze	Getting Started with Code 1 – Lesson 8 – App Practice, apply skills and reflection	<b>Bitbox</b>
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# Computing

## Year 4



## Learning Intentions

Year 4	
E-safety	Understands the opportunities computer networks offer for communication
	Identifies a range of ways to report concerns about content
	Recognises acceptable/unacceptable behaviour
Computing / Digital Literacy	Selects a variety of software to accomplish given goals
	Selects, uses and combines internet services
	Analyses and evaluates information
	Collects and presents data
Coding	Designs programs that accomplish specific goals
	Designs and creates programs
	Debugs programs that accomplish specific goals
	Uses repetition in programs
	Controls or simulates physical systems
	Uses logical reasoning to detect and correct errors in programs
	Understands how computer networks can provide multiple services, such as the World Wide Web
App Specific	Use word processing and presentation tools.
	Use film editing software

## Year 4 Coding Toolkit

Toolkits are to help guide what should be included in a coding project and to aid assessment.

Toolkits for the different genres can be found in Resources folder.

A sample assessment document can be found in Resources folder.

Toolkits can be introduced in the same way that a toolkit or success criteria might be in English (Talk for Writing) and developed in the series of lessons outlined in the planning.

Particular focus should be placed on use of full sentence answers (including correct vocabulary), success in achieving goals and use of the toolkit.

## Year 4 Computing Vocabulary



### Algorithm

An algorithm is a sequence of instructions or a set of rules to get something done.

Please note: a piece of code is not an algorithm.

### Decomposition

The process of breaking down a problem into smaller manageable parts is known as decomposition. Decomposition helps us solve complex problems and manage large projects.

### Sequences

This means that the computer will run your code in order, one line at a time from the top to the bottom of your program. It will start at the first block of code, then execute the next block of code then the next and so on until it reaches the last code block of your program.

### Repetition

Sometimes you want the computer to execute the same lines of code several times. This is done using a loop. There are three types of loops: Forever loops, repeat n time loops and repeat until loops. That's handy as it enables you not to have to copy the same blocks of code many times.

### Selection

Sometimes you only want some blocks of code to be run only if a condition is met, otherwise you want the computer to ignore these blocks and jump over them. This is achieved using IF statements. E.g. If a condition is met then blocks contained within the IF block are executed otherwise the computer jumps to the next code blocks without even looking at them.

**You may need to register and login to the Barefoot website for these resources. It's quick and free to do.**

Mastery example questions like maths	Exemplar lesson and planning material
<div data-bbox="85 177 405 432" style="background-color: blue; color: white; padding: 10px; margin-bottom: 10px;">           What happens if you change..?         </div> <div data-bbox="436 177 757 432" style="background-color: yellow; padding: 10px; margin-bottom: 10px;">           If you change the order of the blocks, does it have the same result?         </div> <div data-bbox="85 448 405 703" style="background-color: black; color: white; padding: 10px; margin-bottom: 10px;">           Can you get the same result with a different type of repeat block?         </div> <div data-bbox="436 464 757 655" style="background-color: lightgray; padding: 10px;">           How do you make the conditional false?         </div>	<p>Exemplar complete unit, including planning, scaffolding, questioning and assessment</p> <p>Lesson plan for a similar maths game, including slides (requires registration)</p> <p>Example slides using PRIMM in resource folder.</p> <p><u>Autumn 2:</u></p> <p><u>Spring 1:</u></p> <p><u>Summer 1:</u></p>
App or software used within the year	
<p>Swift Playground (iPad)</p> <p>Tynker (iPad)</p> <p>iMovie (iPad)</p> <p>Microsoft Word (Windows 10)</p> <p>Microsoft PowerPoint (Windows 10)</p> <p>Paint.net (Windows 10)</p>	

Autumn 1	1 & 2	3	4	5	6	7	8
<b>Topic</b>	E-safety:	E-safety: Google: Don't fall for fake	E-safety: Google: Don't fall for fake	E-safety: Google: Don't fall for fake	E-safety: Google: Don't fall for fake	E-safety: Google: Don't fall for fake	E-safety: Google: Don't fall for fake
<b>Lesson</b>	I am Internet Awesome	Don't bite that phishing hook!	Who are you, really?	About those bots	Is that really true?	Spotting disinformation online	Interland: Reality River
<b>LO</b>	To agree to the Be Internet Awesome pledge & E-safety assembly	To recognize ways people, steal personal information	To recognize when someone is trying to steal personal info	To analyse how computer 'bots' can impact on daily life	To recognise if online information is credible.	To develop skills to detect fake news and disinformation	To put my learning into practice
<b>Planning</b>	To read and sign the Be Internet Awesome pledge	<a href="#">Link Slideshow</a>	<a href="#">Link Slideshow</a>	<a href="#">Link Slideshow</a>	<a href="#">Link Slideshow</a>	<a href="#">Link Slideshow</a>	<a href="#">Link Slideshow</a>

Autumn 2	1	2	3	4	5	6	7	8
<b>Topic</b>	Digital Literacy: Exploring our Earth	Digital Literacy: Exploring our Earth	Digital Literacy: Research and develop a topic	Digital Literacy: Research and develop a topic	Digital Literacy: Research and develop a topic	Digital Literacy: Research and develop a topic	Digital Literacy: Research and develop a topic	Digital Literacy: Research and develop a topic
<b>Lesson</b>	Getting started with Google Earth	Google Earth Projects  (Google Expeditions?? When unblocked)	<b>Clarify</b> - what information are you looking for?	<b>Search</b> - what words will give you the highest quality results?	<b>Delve</b> - which search results should you explore further?	<b>Evaluate</b> - how do you know if it is the info you need and is it reliable?	<b>Cite</b> - can you summarise the information, use direct quotes and cite sources?	<b>Organisation</b> - how can you keep the valuable information that you have gathered, organised?
<b>LO</b>	Use maps, atlases, globes and digital/computer mapping to locate countries and describe features studied	Create and experience stories about the world	To research and record information	To use search effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content	To be discerning in evaluating digital content	To assess the credibility of a source on the internet	Communication and collaboration on the World Wide Web	Collect, analyse, evaluate and present data and information

<b>Planning</b>	<a href="#">Overview and resources: Geography NC:</a>	<a href="#">Google Earth Voyager:</a>	<a href="#">Kathleen Morris: Mini Lesson plans:</a>	<a href="#">Mini Lesson Plans:</a>				
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<b>Spring 1</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>Topic</b>	Word processing: creating a document	Word processing	PowerPoint: Creating a presentation	PowerPoint: Design and transition	Paint.net	Paint.net
<b>Lesson</b>	Creating a word document. Saving	Opening and editing a word document and Save As	Creating a presentation Saving	Opening and editing a PowerPoint and Save As	Photo editing – Changes and effects,	Photo editing – selecting and cropping.
<b>LO</b>	To create a word document and edit font	To open and edit word document	To create a PowerPoint and edit font	To re-open and edit PowerPoint	To layer images on top of each other. To create image effects  To understand images can be changed or enhanced.	To understand the smart select function (Magic wand)  To use the crop function
<b>Planning</b>	Topic related <a href="#">Basic tasks in word:</a> <a href="#">Basic tasks in Word Online:</a>	Topic related  <a href="#">Design and edit in Word:</a>	Topic related  <a href="#">Basic tasks in PowerPoint:</a>	<a href="#">Changing fonts in a presentation:</a> <a href="#">Changing colour of text on a slide:</a> <a href="#">Adding bullets or numbers to text:</a>	<a href="#">Create a custom name plate. PowerPoint.</a>  Using Paint.net	

Spring 2	1	2	3	4	5	6
<b>Topic</b>	Getting Started	Think in Steps	Think in Fixes	Think in Circles	Think in Bits	Think in Sets
<b>Lesson</b>	Future Developer	Solving problems with Algorithms	Debugging	Looking for Loops	Composition and Decomposition	Abstraction
<b>LO</b>	Thinking like a developer	Understand and identify algorithms	Identify bugs and how to approach fixing them	Thinking efficiently and identifying loops	Understanding decomposition to solve problems	Understand abstraction to solve problems
<b>Planning</b>	Getting Started with Code 2 – Lesson 0	Getting Started with Code 2 – Lesson 1	Getting Started with Code 2 – Lesson 2	Getting Started with Code 2 – Lesson 3	Getting Started with Code 2 – Lesson 4	Getting Started with Code 2 – Lesson 5
<b>Notes</b>	Tynker	Keynote (download file linked in lesson), Tynker	Keynote (download file linked in lesson), Tynker	Keynote (download file linked in lesson), Tynker	Linked video file in Lesson – Cup song – requires plastic cups.	Keynote (download file linked in lesson), Tynker

Summer 1	1	2	3	4	5	6	7
<b>Topic</b>	Digital Literacy	iMovie – Trailers 1	iMovie – Trailers 2	iMovie – Stop Motion	iMovie – Stop Motion	Green Screen replacement	Green Screen replacement
<b>Lesson</b>	Perspective Photography	Create trailer using pictures	Create more complex video using a mixture of video and photo	Animation techniques Creating simple Stop motion	Animation techniques Creating simple Stop motion	Create a new report using a green screen	present and show final piece
<b>LO</b>	Select, use and combine a variety of software on a range of digital devices to design and create a range of content	To develop camera skills and manipulation	To develop camera skills and manipulation	practise simple photography skills	practise simple photography skills	Use a variety of method to create a news report with a replacement background	Use a variety of method to create a news report with a replacement background
<b>Planning</b>	<a href="#">Simon Haughton Planning.PP:</a>	Topic based if possible			<a href="#">Thunderstorm News Report Template Using iMovie on iPads</a> <a href="#">Using Green Screen in iMovie</a>		

Summer 2	1	2	3	4	5	6	7
<b>Topic</b>	Think in Patterns	Think in Specifics	Think in Cycles	Think in and Outside the box	Think in Practice	App Design	App Design
<b>Lesson</b>	Forming Functions	Conditional Statements	While Loops and Nested Loops	Variables, Input and Output	Design User Interface	Design your own app	Create your own app
<b>LO</b>	Understand how functions can make coding efficient	Understand conditional statements for different contexts	Understanding Loops in simple conditions	Understanding Variables to change values	Understanding User Interface and User Experiences	Understanding the app development process	Understand app development
<b>Planning</b>	Getting Started with Code 2 – Lesson 6	Getting Started with Code 2 – Lesson 7	Getting Started with Code 2 – Lesson 8	Getting Started with Code 2 – Lesson 9	Getting Started with Code 2 – Lesson 10	Getting Started with Code 2 – Lessons 1 – 5 optional activity – app development	Getting Started with Code 2 – Lessons 6 – 10 optional activity – app development
<b>Notes</b>	Refers back to Getting started with code 2 lesson 1	Pages and Safari required, Tynker.	Refers back to lesson 1 – creating a sandwich, requires Keynote, Tynker	Requires Pages, Tynker	Download linked Keynote template, Tynker.	Mock-up app design in Keynote	Mock-up app design in Keynote

# Computing

## Year 5

## Learning Intentions

Year 5	
E-safety	Understands the opportunities computer networks offer for collaboration
	Is discerning in evaluating digital content
Computing / Digital Literacy	Combines a variety of software to accomplish given goals
	Selects, uses and combines software on a range of digital devices
	Analyses and evaluates data
	Designs and creates systems
Coding	Solves problems by decomposing them into smaller parts
	Uses selection in programs
	Works with variables
	Uses logical reasoning to explain how some simple algorithms work
	Uses logical reasoning to detect and correct errors in algorithms
	Understands computer networks, including the internet
	Appreciates how search results are ranked
App Specific	Create animations

## Coding Toolkit

Toolkits are to help guide what should be included in a coding project and to aid assessment.

Toolkits for the different genres can be found in the Resources folder.

A sample assessment document can be found in the Resources folder.

Toolkits can be introduced in the same way that a toolkit or success criteria might be in English (Talk for Writing) and developed in the series of lessons outlined in the planning.

Particular focus should be placed on use of full sentence answers (including correct vocabulary), success in achieving goals and use of the toolkit.

## Computing Vocabulary



### Algorithm

An algorithm is a sequence of instructions or a set of rules to get something done. Please note: a piece of code is not an algorithm.

### Decomposition

The process of breaking down a problem into smaller manageable parts is known as decomposition. Decomposition helps us solve complex problems and manage large projects.

### Sequences

This means that the computer will run your code in order, one line at a time from the top to the bottom of your program. It will start at the first block of code, then execute the next block of code then the next and so on until it reaches the last code block of your program.

### Repetition

Sometimes you want the computer to execute the same lines of code several times. This is done using a loop. There are three types of loops: Forever loops, repeat n time loops and repeat until loops. That's handy as it enables you not to have to copy the same blocks of code many times.

### Selection

Sometimes you only want some blocks of code to be run only if a condition is met, otherwise you want the computer to ignore these blocks and jump over them. This is achieved using IF statements. e.g. If a condition is met then blocks contained within the IF block are executed otherwise the computer jumps to the next code blocks without even looking at them.

### Variables

A variable is a simple way of storing one piece of information somewhere in the computer's memory whilst a program is running, and getting that information back later. Programs store, retrieve or change the value of a variable, such as a user's name, the name of a product to be purchased in an online store and a score in a computer game.

Mastery example questions like maths	Exemplar lesson and planning material
<div data-bbox="85 177 405 432" style="background-color: blue; color: white; padding: 10px; border: 1px solid black;"> <p>What happens if you change..?</p> </div> <div data-bbox="436 177 757 432" style="background-color: yellow; padding: 10px; border: 1px solid black;"> <p>If you change the order of the blocks, does it have the same result?</p> </div> <div data-bbox="85 448 405 703" style="background-color: black; color: white; padding: 10px; border: 1px solid black;"> <p>Can you get the same result with a different type of repeat block?</p> </div> <div data-bbox="436 464 757 655" style="background-color: lightgray; padding: 10px; border: 1px solid black;"> <p>How do you make the conditional false?</p> </div>	<p>Exemplar complete unit, including planning, scaffolding, questioning and assessment</p> <p>Lesson plan for a similar maths game, including slides (requires registration)</p> <p>Example slides using PRIMM in resource folder.</p> <p><u><a href="#">Year 5 SharePoint Resources:</a></u></p>
App or software used within the year	
<p>Swift Playground (iPad)</p> <p>Scratch Desktop (Windows 10)</p> <p>Microsoft PowerPoint (Windows 10)</p> <p>Microsoft Excel (Windows 10)</p>	

Autumn 1	1 & 2	3	4	5	6	7	8
<b>Topic</b>	E-safety:	E-safety: Secure your secrets	E-safety: Secure your secrets	E-safety: Secure your secrets	Digital Literacy: Plan an event	Digital Literacy: Plan an event	Digital Literacy: Plan an event
<b>Lesson</b>	I am internet awesome	How to build a great password	Keep it to yourself	Interland: Tower of Treasure	Select and research an event	Create a logo	Create a flyer to advertise
<b>LO</b>	To agree to the Be Internet Awesome pledge & E-safety assembly	To create a strong password	To customize privacy settings	To put my learning into practice	To create docs and collaborate using Microsoft Word (online)	Use Microsoft Publisher (online) to create an image	To create an advert using Microsoft Publisher(online)
<b>Planning</b>	To read and sign the Be Internet Awesome pledge	<a href="#">Link Slideshow</a> <a href="#">Google Interland</a>	<a href="#">Link Slideshow</a> <a href="#">Google Interland</a>	<a href="#">Link Slideshow</a> <a href="#">Google Interland</a>	<a href="#">Basic tasks in Word:</a>	<a href="#">BBC Video:</a> <a href="#">Apple Slides: Publisher</a>	<a href="#">BBC Video:</a> <a href="#">Apple Slides:</a>

Autumn 2	1	2	3	4	5	6	7	8
<b>Topic</b>	Digital Literacy: Spreadsheets 1	Digital Literacy: Spreadsheets 2	Digital Literacy: Spreadsheets 3	Digital Literacy: Spreadsheets 4	Digital Literacy: Spreadsheets 5	Digital Literacy: Spreadsheets 6	Coding	Coding
<b>Lesson</b>	Introduction to Spreadsheets <a href="#">Detailed Unit Planning:</a>	Entering formulae into a spreadsheet <a href="#">Formula Prompt:</a>	The importance of using a cell reference for recalculation	Changing data in spreadsheets to answer 'what if?'	SUM formula <a href="#">Sum formula prompt:</a>	Choosing the correct function	Christmas card competition	Christmas card competition
<b>LO</b>	To identify the key elements of a spreadsheet	How spreadsheets can be used to perform quick, accurate calculations	To enter labels and numbers into a spreadsheet	Exploring spreadsheet models that allow the exploration of possible outcomes	To use SUM to calculate a set of numbers in a range of cells	That mathematical problems can be explored using a spreadsheet	To create an animation in Scratch	To create an animation in Scratch
<b>Planning</b>	<a href="#">Wizard's Challenge:</a>	<a href="#">Gold Mine:</a>	Blank Excel Spreadsheet	<a href="#">Sweets Problem:</a>	<a href="#">Race Points:</a> <a href="#">Shopping Bills/Lunch Box:</a>	<a href="#">Pocket Money:</a> <a href="#">Attendance Register:</a>	<a href="#">Resource:</a> <a href="#">Lesson Plan</a> <a href="#">Scratch starter programs</a> <a href="#">Scratch teacher programs</a>	

Spring 1	1	2	3	4	5	6
<b>Topic</b>	E-safety: Cyber bullying	E-safety: Cyberbullying	Coding: Think Like a computer	Coding: Think like a Detective	Coding: Think Efficiently	Coding: Think Efficiently
<b>Lesson</b>	'Let's fight it together'	Behind the scenes	Commands and sequences	Debugging	Functions and a Bit of Loops	Functions and a Bit of Loops
<b>LO</b>	Understand, prevent and respond to Cyberbullying threats.	Becoming a responsible digital citizen	Describe, Demonstrate and code using commands and sequences	Describe, Demonstrate and Debug with code	Describe, Demonstrate and Code using functions and loops	Describe, Demonstrate and Code using functions and loops
<b>Planning</b>	Let's fight it together video: Resources:	Character interviews: Cyberbullying game:	Everyone Can Code 1 – lesson 1	Everyone Can Code 1 – Lesson 2	Everyone Can Code 1 – Lesson 3 Pattern Maker Activity	Everyone Can Code 1 – Lesson 3, practice in Swift Playgrounds

Spring 2	1	2	3	4	5	6
<b>Topic</b>	Coding: The Incredible Code Machine	Coding: Think Logically	Coding: Think Logically	Coding: Think Logically	Coding: Think Again and Again	Coding: 21 Questions
<b>Lesson</b>	Problem Solving	Conditional Code	Conditional Code Practice	Conditional Thinking	While Loops	Logic
<b>LO</b>	Design programmes to solve challenges with functions and loops	Demonstrate and code using algorithms	Describe, Demonstrate and Code using conditional code and logic	Demonstrating and coding with conditional code	Describe, Demonstrate and Code with 'while' loops	Demonstrate and code using Logic
<b>Planning</b>	Swift Playgrounds: Code Machine	Everyone Can Code 1 – lesson 4 – Scavenger Hunt	Everyone Can Code 1 – Lesson 4 – coding in Swift Playgrounds	Swift Playgrounds – Blink	Everyone Can Code – 1 – Lesson 5	Everyone Can Code 1 – Lesson 5 Optional Activity – download 21 Questions from page 45.

Summer 1	1	2	3	4	5	6	7
<b>Topic</b>	Animation: GIF Creation	Animation	Animation	Digital Literacy: Internet research and website design	Digital Literacy: Internet research and website design	Digital Literacy: Internet research and website design	Digital Literacy: Internet research and website design
<b>Lesson</b>	Create animated GIF's using PowerPoint	Pivot Stick Animator	Pivot Stick Animator	What makes a good webpage?	Page Layout	Type the text Images	Hyperlinks Publishing the page
<b>LO</b>	Use still images to produce an animation	Combining individual frames to perceive movement	Creating custom-made, creative animations	I can evaluate webpages	I can create a webpage layout	I can add text to a webpage I can add images to a webpage	I can add hyperlinks into a webpage I can publish and share my webpage
<b>Planning</b>	<a href="#">Animated gif's using PP:</a>  <a href="#">Adding an animated gif to a slide:</a>	<a href="#">Pivot Animator Download:</a>  <a href="#">Lesson plans:</a>		<a href="#">BBC Bitesize video: What makes a good website?</a> <a href="#">Microsoft SharePoint:</a> <a href="#">Lesson plans and resources:</a>			

Summer 2	1	2	3	4	5	6	7
<b>Topic</b>	Coding: Think the Same Idea	Coding: Think the Same Idea	Coding: Shapes	Coding: Which Way to Turn	Coding: Rock Paper Scissors	Coding: Spirals	Coding: Mission to Mars
<b>Lesson</b>	Algorithms	Conquering the maze	Real Coding	Roll Right, Roll Left	Coding a game	Coding geometric patterns	Controlling a Mars Rover
<b>LO</b>	Describe, Demonstrate and code using algorithms	Demonstrate and understanding of code to create a game	Demonstrate an understanding of code and how parameters effect results	Using Code to control a VR robot.			

<b>Planning</b>	Everyone Can Code 1 – Lesson 6 – who’s the tallest	Everyone Can Code 1 – Lesson 6 – Practice with Swift Playgrounds Learn to Code 1 – The Right-Hand Rule, Adjusting Your Algorithm and Conquering the Maze.	Everyone Can Code – Lesson 6 optional activity – Shapes – download from page 51	Swift Playgrounds Learn to Code 1 – Which Way to Turn and Roll Right, Roll Left.	Swift Playgrounds – Rock, Paper, Scissors.	Swift Playgrounds – Spirals	Swift Playgrounds – Astrobot Mission to Mars
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# Computing

## Year 6

## Learning Intentions

Year 6	
E-safety	Understands the opportunities computer networks offer for collaboration
	Is discerning in evaluating digital content
Computing / Digital Literacy	Combines a variety of software to accomplish given goals
	Selects, uses and combines software on a range of digital devices
	Analyses and evaluates data
	Designs and creates systems
Coding	Solves problems by decomposing them into smaller parts
	Uses selection in programs
	Works with variables
	Uses logical reasoning to explain how some simple algorithms work
	Uses logical reasoning to detect and correct errors in algorithms
	Understands computer networks, including the internet
	Appreciates how search results are ranked

## Year 6 Coding Toolkit

Toolkits are to help guide what should be included in a coding project and to aid assessment.

Toolkits for the different genres can be found in the Resources folder.

A sample assessment document can be found in the Resources folder.

Toolkits can be introduced in the same way that a toolkit or success criteria might be in English (Talk for Writing) and developed in the series of lessons outlined in the planning.

Particular focus should be placed on use of full sentence answers (including correct vocabulary), success in achieving goals and use of the toolkit.

## Year 6 Computing Vocabulary



### Algorithm

An algorithm is a sequence of instructions or a set of rules to get something done.

Please note: a piece of code is not an algorithm.

### Decomposition

The process of breaking down a problem into smaller manageable parts is known as decomposition. Decomposition helps us solve complex problems and manage large projects.

### Sequences

This means that the computer will run your code in order, one line at a time from the top to the bottom of your program. It will start at the first block of code, then execute the next block of code then the next and so on until it reaches the last code block of your program.

### Repetition

Sometimes you want the computer to execute the same lines of code several times. This is done using a loop. There are three types of loops: Forever loops, repeat n time loops and repeat until loops. That's handy as it enables you not to have to copy the same blocks of code many times.

### Selection

Sometimes you only want some blocks of code to be run only if a condition is met, otherwise you want the computer to ignore these blocks and jump over them. This is achieved using IF statements. e.g. If a condition is met then blocks contained within the IF block are executed otherwise the computer jumps to the next code blocks without even looking at them.

**You may need to register and login to the Barefoot website for these resources. It's quick and free to do.**

Mastery example questions	Exemplar lesson and planning material
<div data-bbox="85 177 405 459" style="background-color: blue; color: white; padding: 10px; border-radius: 5px;"> <p>What happens if you change..?</p> </div> <div data-bbox="436 177 757 459" style="background-color: yellow; padding: 10px; border-radius: 5px;"> <p>If you change the order of the blocks, does it have the same result?</p> </div> <div data-bbox="85 480 405 762" style="background-color: black; color: white; padding: 10px; border-radius: 5px;"> <p>Can you get the same result with a different type of repeat block?</p> </div> <div data-bbox="436 496 757 715" style="background-color: lightgray; padding: 10px; border-radius: 5px;"> <p>How do you make the conditional false?</p> </div>	<p>Exemplar complete unit, including planning, scaffolding, questioning and assessment</p> <p><u>Lesson plan for a similar maths game, including slides (requires registration)</u></p> <p>Example slides using PRIMM in resource folder.</p> <p><u>Year 6 SharePoint Resources:</u></p>
App or software used within the year	
<p>Swift Playgrounds (iPad)</p> <p>Microsoft PowerPoint (Windows 10)</p>	

Autumn 1	1 & 2	3	4	5	6	7	8
<b>Topic</b>	E-safety:	E-safety: It's cool to be kind	E-safety: It's cool to be kind				
<b>Lesson</b>	I am internet awesome	How can I be an upstander?	Upstander options	...but say it nicely!	Mind your tone	Walking the walk	Interland: Kind Kingdom
<b>LO</b>	To agree to the Be Internet Awesome pledge & E-safety assembly	To respond to bullying online	To discuss different ways to respond to bullying	To turn negative interactions not positive ones	To interpret emotions behind texts and messages	To model behaviour to others	To put my learning into practice
<b>Planning</b>	To read and sign the Be Internet Awesome pledge	<a href="#">Link Slideshow</a> <a href="#">Google Interland</a>	<a href="#">Link Slideshow 1</a> <a href="#">Slideshow 2</a>				

Autumn 2	1	2	3	4	5	6	7	8
<b>Topic</b>	Digital Literacy: Google SketchUp	Digital Literacy: Google SketchUp	Digital Literacy: Google SketchUp	Digital Literacy: Google SketchUp	Digital Literacy: Google SketchUp	Digital Literacy: Google SketchUp	Coding	Coding
<b>Lesson</b>	Lesson 1: 2D to 3D  Drawing a 2D/3D shape.	Lesson 2: Detail  Adding detail to 3D drawings	Lesson 3: Inside  Inside a 3D shape	Lesson 4: Furniture  Adding and manipulating 3D models	Lesson 5: A Table  Creating a complex 3D model	Lesson 6: Your Room  Creating a 3D model of my own design	Christmas card competition	Christmas card competition
<b>LO</b>	I can draw a 2D shape or line. I can manipulate 2D shapes into 3D shapes.	I can use the measure tool to draw shapes. I can use inference points to draw lines and shapes.	I can double click to copy, push/pull and offset.	I can import models from the 3D warehouse. I can copy and manipulate 3D models.	I can select the tools I need for different features. I can use the main tools independently.	I can use all the main tools on the SketchUp toolbar.	To create an animation in Scratch	To create an animation in Scratch
<b>Planning</b>	<a href="#">Google SketchUp: Lesson 1:</a>	<a href="#">Lesson 2:</a>	<a href="#">Lesson 3:</a>	<a href="#">Lesson 4:</a>	<a href="#">Lesson 5:</a>	<a href="#">Lesson 6:</a>	<a href="#">Resources:</a>	<a href="#">Resources:</a>

Spring 1	1	2	3	4	5	6
<b>Topic</b>	E-safety	E-safety	Think like a NewsBot	Think Like a NewsBot	Spiral Challenge	Think Like an Architect
<b>Lesson</b>	Why is Social Media Free?	Fake News in real life.	Variables – NewsBot Activity	Variables Practice	Coding Geometric Patterns	Types and Initialisation
<b>LO</b>	To understand why social media, web search and YouTube are free to use.	To understand bias and fake news in real life To understand that real damage and pain can be caused by fake news.	Demonstrate and use variables, coding with variables	Demonstrate and use variables, coding with variables	Develop knowledge of coding with Variables	Demonstrate the use of types and initialisation
<b>Planning</b>	<a href="#">PowerPoint.</a> <a href="#">Kahoot Quiz – Why Free?</a>	<a href="#">PowerPoint</a> <a href="#">Kahoot Quiz 1 – 50 Million Users</a> <a href="#">Kahoot Quiz 2 – True or False</a>	Everyone Can Code 2, lesson 7 (p58 – 60)  Swift Playgrounds, Learn to Code 2 - Variables Playground, Pages	Everyone Can Code 2, Lesson 7 (p61 – 62)  Swift Playgrounds	Everyone Can Code 2, Lesson 7 (p63)  Spirals Playground	Everyone Can Code 2, Lesson 8 (p65 – 67)  Swift Playgrounds - Types, Sketches School, Pages

Spring 2	1	2	3	4	5	6
<b>Topic</b>	Think Like an Architect	Rock Paper Scissors Challenge	Think Specifically	Think Specifically	Think Specifically	Code practice
<b>Lesson</b>	Types and initialisation practice	Defining a game's type and initialisation	Parameters	Parameters Practice	Parameters Practice Continued	Explore the additional challenges in small groups – Cipher, Battleship, Running the Maze, or LEGO Animal Rescue (if available)

<b>LO</b>	Demonstrate the use of types and initialisation in code	Demonstrate the use of types and initialisation in code	Demonstrate the use of Parameters	Demonstrate the use of Parameters	Demonstrate the use of Parameters	Demonstrate a range of coding and problem solving skills
<b>Planning</b>	Everyone Can Code 2, Lesson 8 (p68 – 69)  Swift Playgrounds	Everyone Can Code 2, lesson 8 (p70)  Swift Playgrounds, Rock Paper Scissors Playground	Everyone Can Code 2, Lesson 9 (p71 – 73)  Swift Playgrounds - Parameters, Pages	Everyone Can Code 2, Lesson 9 (p74 – 75)  Swift Playgrounds	Everyone Can Code 2, Lesson 9 (p74 – 75)  Swift Playgrounds	Swift Playground Challenges, Cipher, Battleship, Running Maze, and LEGO Animal Rescue (if LEGO EV3 available in school)

Summer 1	1	2	3	4	5	6	7
<b>Topic</b>	E-safety	Digital Literacy: HTML Coding	Digital Literacy: Python Coding	Digital Literacy: Childnet video competition	Digital Literacy: Childnet video competition	Digital Literacy: Childnet video competition	Digital Literacy: Childnet video competition
<b>Lesson</b>	Password security and scam emails.	Introduction to HTML	Introduction to Python- The difference between visual and scripted programming languages.	Initial lesson to explain the project  To create and plan the contents of the video	Script writing (Literacy links)  Making props (DT/Art)	Using iMovie or similar	Using iMovie or similar
<b>LO</b>	To discuss identity theft and how to protect about it. To understand 2 factor authentications.	I can explain that web pages are written using HTML; use basic HTML tags; remix webpages using Mozilla X-Ray Goggles	Understand that Python is the language that powers websites and apps.	To discuss the video competition and the theme  To plan a storyboard	To write a script  To create props	To record a video	To record a video
<b>Planning</b>	<a href="#">LINK Powerpoint Google Interland</a>	<a href="#">Barefoot Computing: Resources:</a> <a href="#">LINK – X Ray Goggles Install Guide</a>	<a href="#">A visual introduction to Python:</a>	<a href="#">Link: 6 Frame Storyboard.</a>			

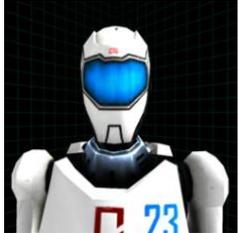
<b>Summer 2</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>Topic</b>	Think Organised	Think Organised	Think Organised	Starting Points	Milestone Project	Milestone Project	Milestone Project share and review
<b>Lesson</b>	Arrays	Arrays Practice	Arrays Practice Continued	Graphing data with arrays	Build your own world - planning and story creation	Build your own world – world creation	Build your own world – share and review
<b>LO</b>	Demonstrate the use of Arrays in coding	Demonstrate the use of Arrays in coding	Demonstrate the use of Arrays in coding	Demonstrate the use of arrays to visualise data	Demonstrate a range of coding concepts	Demonstrate a range of coding concepts	Demonstrate a range of coding concepts
<b>Planning</b>	Everyone Can Code 2, Lesson 10 (p77 – 79)  Swift Playgrounds – World building and Arrays, Keynote, Pages	Everyone Can Code 2, Lesson 10 (p80 – 81)  Swift Playgrounds – World building and Arrays	Everyone Can Code 2, Lesson 10 (p80 – 81)  Swift Playgrounds – World building and Arrays	Everyone Can Code 2, Lesson 10 (p82)  Swift Playgrounds, Graphing Starting point file (download from p82)	Everyone Can Code 2, Milestone project, (p83 – 85)  Pages, Swift Playgrounds	Everyone Can Code 2, Milestone project, (p83 – 85)  Pages, Swift Playgrounds	Everyone Can Code 2, Milestone project, (p83 – 85)  Pages, Swift Playgrounds

## Equivalent Programs

It is good practice to mention the equivalent services from competing companies, as real world will use different software suites. Functions and skills learned in one are often transferable to others.

Vendor	 Microsoft	 Apple	 Google	 OTHER
Word Processing	 Microsoft Word	 Apple Pages	 Google Docs	 WPS Office
Spreadsheet	 Microsoft Excel	 Apple Numbers	 Google Sheets	 WPS Office

<b>Presentation</b>	 <p>Microsoft PowerPoint</p>	 <p>Apple Keynote</p>	 <p>Google Slides</p>	 <p>WPS Office</p>
<b>Online storage</b>	 <p>Microsoft OneDrive</p>	 <p>Apple iCloud</p>	 <p>Google Drive</p>	 <p>Dropbox</p>
<b>Website Creation</b>	 <p>Microsoft SharePoint</p>		 <p>Google Sites</p>	
<b>Page layout publishing</b>	 <p>Microsoft Publisher</p>	 <p>Apple Pages</p>	 <p>Lucidpress</p>	 <p>WPS Office</p>

<p><b>Photo Editing</b></p>	 <p>Photos</p>	 <p>Apple Photos</p>	 <p>Google Drawings</p>	 <p>Paint.net</p>
<p><b>Other Coding Apps</b></p>	 <p>Kodable</p>	 <p>Microsoft Kodu</p>	 <p>Lightbot</p>	 <p>A.L.E.X</p>
	 <p>Little Red Coding club</p>			
<p><b>Useful apps</b></p>	 <p>Google Earth</p>	 <p>Google Expeditions</p>	 <p>Epic Reading app.</p>	 <p>AR-Kid Space.</p>