Oughtrington Primary School
National Curriculum Coverage - Computing

Subject Overview

This document shows the Early Learning Goals and National Curriculum coverage for Computing. It highlights when each subject should be taught and which aspect of the National Curriculum is to be planned for.

This is the starting point for the planning of a sequence of learning in each area. The placement of each objective has been carefully planned to allow for the clear progression of knowledge and skills.

This document should be used alongside the individual subject substantive and disciplinary knowledge progression maps for each year group. This is not a working document and should not be changed or altered without discussion with the subject lead.

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
EYFS	- Technology - By the end of Reception - Switching on a variety of everyday technology e.g. class computers, torches, beebots, recordable devices - Powering down a variety of everyday technology safely as above. - Being able to interact with age appropriate software e.g. select and double click on an icon, then scroll and navigate the software. - Understand the different purposes of specific technology and suggest some appropriate uses. - Using technology to create own content e.g. recording their voice, uploading a picture - Simple coding skills using age appropriate technology e.g. programmable toys. - Understand some basic safety rules for staying safe online. - Project Evolve Early Years Online Safety Program https://projectevolve.co.uk/toolkit/resources/years/early-years-7/ This covers the strands from https://www.gov.uk/government/publications/education-for-a-connected-world					
	Computing Systems and Networks	**Creating Media**	**Programming A**	**Data and Information**	**Creating Media**	**Programming B**
YEAR 1	**Information technology around us** Identifying IT and how its responsible use improves our world in school and beyond. 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	**Digital painting** Choosing appropriate tools in a program to create art, and making comparisons with working non-digitally. Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	**Moving a robot** Writing short algorithms and programs for floor robots, and predicting program outcomes. 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	**Grouping data** Exploring object labels, then using them to sort and group objects by properties. Use technology purposefully to create, organise, store, manipulate and retrieve digital content. Recognise common uses of information technology beyond school	**Digital writing** Using a computer to create and format text, before comparing to writing non-digitally. Use technology purposefully to create, organise, store, manipulate and retrieve digital content. Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when	**Programming animations** Designing and programming the movement of a character on screen to tell stories. 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

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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		Use logical reasoning to predict the behaviour of simple programs. Recognise common uses of information technology beyond school		they have concerns about content or contact on the internet or other online technologies	Use logical reasoning to predict the behaviour of simple programs. 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
	● Project Evolve Year 1 Online Safety Program https://projectevolve.co.uk/toolkit/resources/years/year-one/				
YEAR 2	**Information technology around us** Identifying IT and how its responsible use improves our world in school and beyond. 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	**Digital photography** Capturing and changing digital photographs for different purposes. Use technology purposefully to create, organise, store, manipulate and retrieve digital content. Recognise common uses of information technology beyond school	.**Pictograms** Collecting data in tally charts and using attributes to organise and present data on a computer. Use technology purposefully to create, organise, store, manipulate and retrieve digital content. 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	**Robot algorithms** Creating and debugging programs, and using logical reasoning to make Predictions. 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.	**Making music** Using a computer as a tool to explore rhythms and melodies, before creating a musical Composition Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	**Programming quizzes** Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz. 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.

	● Project Evolve Year 2 Online Safety Program https://projectevolve.co.uk/toolkit/resources/years/year-two/					
YEAR 3	**Connecting computers** Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output 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	**Stop-frame animation** Capturing and editing digital still images to produce a stop-frame animation that tells a story. 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	**Sequencing sounds** Creating sequences in a block-based programming language to make music. 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	**Branching databases** Building and using branching databases to group objects using yes/no questions. 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	**Desktop publishing** Creating documents by modifying text, images, and page layouts for a specified purpose. Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content	**Events and actions in programs** Writing algorithms and programs that use a range of events to trigger sequences of actions. 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
	Ongoing throughout all units of work and interwoven through the whole curriculum where applicable: 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 Taught through: Project Evolve Year 3 Online Safety Program https://projectevolve.co.uk/toolkit/resources/years/year-three/					

YEAR 4	**The internet** Recognising the internet as a network of networks including the WWW, and why we should evaluate online content. 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	**Audio editing** Capturing and editing audio to produce a podcast, ensuring that copyright is considered. 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	**Repetition in shapes** Using a text-based programming language to explore count-controlled loops when drawing shapes. 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	**Data logging** Recognising how and why data is collected over time, before using data loggers to carry out an investigation. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output 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	**Photo editing** Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled. 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	**Repetition in games** Using a block-based programming language to explore count-controlled and infinite loops when creating a game. 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
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YEAR 5	**Sharing information** Identifying and exploring how information is shared between digital systems. 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 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	**Video editing** Planning, capturing, and editing video to produce a short film. 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	**Selection in physical computing** Exploring conditions and selection using a programmable Microcontroller. 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	**Flat-file databases** Using a database to order data and create charts to answer questions. 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	**Vector drawing** Creating images in a drawing program by using layers and groups of objects 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.	**Selection in quizzes** Exploring selection in programming to design and code an interactive quiz. 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
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YEAR 6	Internet communication	Webpage creation	Variables in games	Introduction to spreadsheets	3D modelling	Sensing
	Recognising how the WWW can be used to communicate and be searched to find information. 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 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 | Designing and creating web pages, giving consideration to copyright, aesthetics, and Navigation. 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 | Exploring variables when designing and coding a game.

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 | Answering questions by using spreadsheets to organise and calculate data.

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 | Planning, developing, and evaluating 3D computer models of physical objects.

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 | Designing and coding a project that captures inputs from a physical device.

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 |
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