Evelyn Street Primary Academy

COMPUTING

Our Intended Curriculum

Logic	Computational logic is the process of working step-by-step to understand a problem and develop a solution. It describes the decision-making process used in programming and writing algorithms.
Abstraction	Abstraction is an important part of computer programming. In computing, abstraction is the technique used to arrange computer systems and hide the complexity of programs to make it more accessible to the everyday user.
Machines	A computing machine is a device used to perform calculations and process data.
Algorithms	An algorithm is a process or set of rules followed in calculations or other problem-solving operations, especially by a computer.
Program	A computing program is a collection of instructions that performs a specific task when executed by a computer.
Data	Data is any sequence of one or more symbols given meaning by specific acts of interpretation. Computer data is information processed or stored by a computer.

Evelyn Street Primary School - COMPUTING progression through EYFS
Understanding the World: Computing Overview

Playing & Exploring - Engagement	Active Learning - Motivation	Creating & Thinking Critically - Thinking
• Finding out & exploring • Playing with what they know • Being willing to 'have a go'	• Being involved & concentrating • Keep on trying • Enjoying achieving what they set out to do	• Having their own ideas (creative thinking) • Making links (building theories) • Working with ideas (critical thinking)

ELG
NO ELG's are represented for this area.

Focus	Electronic Communication Understanding Technologies	Text and Multimedia	Research and E-Safety	Digital images and audio	Algorithms Handing information	Vocabulary- To be used daily.
Nursery Skills	• Shows an interest in technological toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as interactive screen, table top computer and tablets	• Knows how to operate simple equipment, e.g. turn on CD player, uses a remote control, can navigate touch-capable technology with support	• Know how to handle equipment safely • Begin to know that they shouldn't use devices without supervision	• Knows that information can be retrieved from digital devices and the internet	• Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images	*Choices, equipment, buttons, movement, screen, keyboard, count, organise,*
Nursery Knowledge	**Autumn 1** All About Me	**Autumn 2** Families and Celebrations	**Spring 1** Traditional Tales and farm animals	**Spring 2** Growing and changing	**Summer 1** People who help us	**Summer 2** Chester Zoo/Knowsley Safari
	•Explore different toys in role play such as telephones, cameras, keyboards.	•Can operate a simple CD player by pressing start and stop to play music.	•Understands that we can search for information on 'google' by typing in a word to find out more.	•Can use a simple I board touch programme to draw a picture by changing tools and colours using the on-screen options.	•Can operate simple games on the iPad and know to open and end a programme.	•Can type their name on a keyboard by finding the letters of their name.

Children to be exposed to key vocabulary daily in provision. High quality resources will be provided for daily accessibility.
Role-play will be a key area where a range of technologies will be used in play- telephones, microwaves, cookers, keyboards, televisions, CD player. These should be modelled .
Interactive screen and table top computer as part of continuous provision

Evelyn Street Primary School – Understanding the World
COMPUTING progression through EYFS

Educational Programme: Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children's personal experiences increases their knowledge and sense of the world around them – from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children's vocabulary will support later reading comprehension.

ELG - NO ELG's are represented for this area

Focus	Electronic Communication Understanding Technologies	Text and Multimedia	Research and E-Safety	Digital images and audio	Algorithms Handing information	Vocabulary- To be used daily.
Reception Skills, Knowledge & Understanding	▪ Completes a simple program on electronic devices	▪ Begin to list different IT in their home	▪ Begin to give reasons why we need to stay safe online ▪ Use the internet with adult supervision to find and retrieve information of interest to them	▪ Create content such as a video recording, stories, and/or draw a picture on screen	▪ Develop digital literacy skills by being able to access, understand and interact with a range of technologies	Click, Internet, website, mouse, images, paint, technology, share, collect, set, sound, communicate, videos, photos, programme, iPad, Twitter, Tapestry, share, Google.

Learning Outcomes	Autumn 1 My Environment & Me	Autumn 2 Special Times & Special Places	Spring 1 Same and Different	Spring 2 Lifecycles	Summer 1 In My Garden	Summer 2 People in the Community
	Explain how to stay safe when using the internet. Know that teachers' communication with them and grown-ups via Tapestry. Turn on the Touch Table, open a programme and follow instructions.	Follow teachers' instructions when using an online interactive programme such as paint or draw. Attempt to draw a place that is special to you. Use the Touch Table to create images using a range of colours and tools to edit and refine. Know that my work belongs to me. Use the tools to label my work – name.	Write a variety of CVC words using a keyboard, comparing any letters that look different on a keyboard.	Use the iPad to take their own images of our natural environment – e.g. life cycles of plants and caterpillars. Understand how to find previously taken images.	Use 'Google' to find out more information about plants and use the images to support their own representations – with supervision of an adult. Use iPad to take their own images of their natural environment – their outdoor area.	Online community – how people in our community connect online. Know who to speak to if someone upsets you online. Share images with people in our community – Tapestry and Twitter with an adult. Send a group class email to a person in our local community and wait for a response.

Online Safety		Programming		Creating Media	

□ Children to be exposed to key vocabulary daily in provision. □ High quality resources will be provided for daily accessibility. □ Role-play areas will be a key area where a range of technologies will be used in play- telephones, keyboards, interactive whiteboards, iPad's, CD player, Turn Tables. These should be modelled by adults. □ Explicit teaching will be needed within this area when using iPad for researching. This should take place in small, guided groups lead by the adult.

KS1

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KS1: POS

- 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.

Computer Science

- To explain what a given command will do
- To understand directional language
- To combine commands to make a sequence
- To plan a simple program using debugging where applicable
- To find more than one solution to a problem
- To choose a command for a given purpose
- To show that a series of commands can be joined together
- To identify the effect of changing values
- To explain that each sprite has its own instructions
- To design parts of a project
- To use an algorithm to create a program
- To describe a series of instructions as a sequence
- To explain what happens when we change the order of instructions
- To use logical reasoning to predict the outcome of a program
- To explain that programming projects can have code and artwork
- To design an algorithm
- To create and debug a program that I have written
- To explain that a sequence of commands has a start
- To explain that a sequence of commands has an outcome
- To create a program using a given design
- To change a given design
- To create a program using my own design
- To decide how my project can be improved

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Digital Literacy

- I can use simple rules to stay safe online
- I can flag anything upsetting online
- I can recognise my private information
- I know information can stay online
- I know to be kind online
- I can explain my work belongs to me
- I can search information
- I can protect my devices
- I know people might act different online
- I know some information should not be shared.
- I can use the internet to communicate
- I can explain simple rules for being online
- I know to use keywords in searches
- I know the difference between real and imaginary
- I know how to keep my information safe
- I can explain devices in my home can be connected to the internet.
- I can explain copyright and fair use

Information Technology

- To identify technology
- To use a keyboards to type on a computer and edit
- To use the freehand, shape and line tools to create a digital painting
- To combine text and digital paintings effectively Show an awareness of the range of devices and tools they encounter in everyday life
- Show an awareness of a range of inputs to a computer (Interactive whiteboard, mouse, touch screen, keyboard
- To take and edit photographs using a digital device

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KS1 – Year A – End points	
Online Safety	- I can use simple rules to stay safe online - I can flag anything upsetting online - I can recognise my private information - I know information can stay online - I know to be kind online - I can explain my work belongs to me - I can search information - I can protect my devices
Moving a Robot	- To explain what a given command will do - To understand directional language - To combine commands to make a sequence - To plan a simple program using debugging where applicable - To find more than one solution to a problem
Using Technology to Create Painting and Text	- To identify technology - To use a keyboards to type on a computer and edit - To use the freehand, shape and line tools to create a digital painting - To combine text and digital paintings effectively
Introduction to Animation	- To choose a command for a given purpose - To show that a series of commands can be joined together - To identify the effect of changing values - To explain that each sprite has its own instructions - To design parts of a project - To use an algorithm to create a program

KS1 – Year B – End points	
Online Safety	• I know people might act different online • I know some information should not be shared. • I can use the internet to communicate • I can explain simple rules for being online • I know to use keywords in searches • I know the difference between real and imaginary • I know how to keep my information safe • I can explain devices in my home can be connected to the internet. • I can explain copyright and fair use
Robot Algorithms	• To describe a series of instructions as a sequence • To explain what happens when we change the order of instructions • To use logical reasoning to predict the outcome of a program • To explain that programming projects can have code and artwork • To design an algorithm • To create and debug a program that I have written
Using IT to Create Memories	• Show an awareness of the range of devices and tools they encounter in everyday life • Show an awareness of a range of inputs to a computer (Interactive whiteboard, mouse, touch screen, keyboard • To take and edit photographs using a digital device
Introduction to Quizzes	• To explain that a sequence of commands has a start • To explain that a sequence of commands has an outcome • To create a program using a given design • To change a given design • To create a program using my own design • To decide how my project can be improved

LKS2	
KS2: POS • 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.	**Digital Literacy** • I can explain my 'identity' • I know why I should be careful of who I trust • I can explain using key phrases to search • I can explain ownership of work • I can describe ways people communicate online • I can explain online and real life • I can explain why passwords are important • I can explain online identities can be different to offline identities • I can describe how information about me can be found online • I can describe strategies to stay safe • I can explain 'artificial intelligence' • I know the dangers of app purchases • I can explain the importance of strong password • I consider copyright when searching online • I am aware of screen addiction
Computer Science • To identify that commands have an outcome • To explain that a program has a start • To recognise that a sequence of commands can have an order • To change the appearance of my project • To create a project from a task description • To explain how a sprite moves in an existing project • To create a program to move a sprite in four directions • To adapt a program to a new context • To develop my program by adding features • To identify and fix bugs in a program • To design and create a maze-based challenge • To identify that accuracy in programming is important • To create a program in a text-based language • To explain what 'repeat' means • To modify a count-controlled loop to produce a given outcome	**Information Technology** • To explain how digital device can be connected with an input, process and output • To recognise the physical components of a network • To explain that animation is a sequence of drawing or photographs • To plan, review and improve an animation • To understand how a network is created • To understand the purpose of the World Wide Web • The consequences of unreliable content • To take and edit images from different sources • To create and edit audio • To combine images and audio within a website

• To decompose a task into small steps • To create a program that uses count-controlled loops to produce a given outcome • To develop the use of count-controlled loops in a difference programming environment • To explain that in programming thee are infinite loops and count-controlled loops • To develop a design that includes two or more loops which run at the same time • To modify an infinite loop in a given program • To design and create a project that includes repetition	

LKS2 – Year A – End points	
Online Safety	• I can explain my 'identity' • I know why I should be careful of who I trust • I can explain using key phrases to search • I can explain ownership of work • I can describe ways people communicate online • I can explain online and real life • I can explain why passwords are important
Sequence in Music	• To identify that commands have an outcome • To explain that a program has a start • To recognise that a sequence of commands can have an order • To change the appearance of my project • To create a project from a task description
How to Create a Network – An Animated Story	• To explain how digital device can be connected with an input, process and output • To recognise the physical components of a network • To explain that animation is a sequence of drawing or photographs • To plan, review and improve an animation
Events and Actions	• To explain how a sprite moves in an existing project • To create a program to move a sprite in four directions • To adapt a program to a new context • To develop my program by adding features • To identify and fix bugs in a program • To design and create a maze-based challenge

LKS2 – Year B – End points	
Online Safety	• I can explain online identities can be different to offline identities • I can describe how information about me can be found online

	• I can describe strategies to stay safe • I can explain 'artificial intelligence' • I know the dangers of app purchases • I can explain the importance of strong password • I consider copyright when searching online • I am aware of screen addiction
Repetition in Shapes	• To identify that accuracy in programming is important • To create a program in a text-based language • To explain what 'repeat' means • To modify a count-controlled loop to produce a given outcome • To decompose a task into small steps • To create a program that uses count-controlled loops to produce a given outcome
Fake News: A Real Story	• To understand how a network is created • To understand the purpose of the World Wide Web • The consequences of unreliable content • To take and edit images from different sources • To create and edit audio • To combine images and audio within a website
Repetition in Shapes	• To develop the use of count-controlled loops in a difference programming environment • To explain that in programming thee are infinite loops and count-controlled loops • To develop a design that includes two or more loops which run at the same time • To modify an infinite loop in a given program • To design and create a project that includes repetition

UKS2	
KS2: POS • 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.	**Digital Literacy** • I can explain identities online can be fake • I understand communities can have negative people • I can make positive contributions to communities • I know how to get help online • I know how to report anything that worries me • I understand using technology needs balance • I can explain how apps share my information • I can explain when to use references • I can explain why some information online may not be true • I can identify and reject inappropriate representations online • I can keep asking to get help when needed • I understand responsibilities online • I can describe some ways that build a positive reputation • I can explain the importance of self-regulating my use of technology • I can describe strategies for managing passwords • I can explain how impulsive communications cause problems • I can apply strategies to evaluating digital content • I can describe ways apps and services can conflict privacy • I can explain the importance of self-regulating my use of technology • I can demonstrate how to make references • I know the boundaries I should follow
Computer Science • To explain how selection is used in computer programs • To relate that a conditional statement connects a condition to an outcome • To explain how selection directs the flow of a program • To design, create and evaluate a program that uses selection • To create a program to run on a controllable device • To explain that selection can control the flow of a program • To update a variable with a user input • To design and create a project that uses inputs and outputs on a controllable device • To define a 'variable' as something that is changeable • To explain why a variable is used in a program • To choose how to improve a game by using variables	**Information Technology** • To understand what is meant by a computer system • To recognise the benefits and implications of sharing information online • To design and create a vector drawing • To use a digital device to record, capture and edit a video using a range of technique • To plan, create and evaluate an advert for a new logo • To know how use a search engine effectively • To know the different methods used to communicate online • To design and create a 3D model online • To design and create an effective website

• To design, create and evaluate a project that builds on a given example • To control a simple circuit connected to a computer • To write a program that includes count-controlled loops • To explain that a loop can stop when a condition is met and can be used to repeatedly check whether a condition has been met • To design and create a physical project that includes selection	

UKS2 – Year A – End points	
Online Safety	• I can explain identities online can be fake • I understand communities can have negative people • I can make positive contributions to communities • I know how to get help online • I know how to report anything that worries me • I understand using technology needs balance • I can explain how apps share my information • I can explain when to use references • I can explain why some information online may not be true
Selection in Quizzes	• To explain how selection is used in computer programs • To relate that a conditional statement connects a condition to an outcome • To explain how selection directs the flow of a program • To design, create and evaluate a program that uses selection
Advertising a New Logo	• To understand what is meant by a computer system • To recognise the benefits and implications of sharing information online • To design and create a vector drawing • To use a digital device to record, capture and edit a video using a range of technique • To plan, create and evaluate an advert for a new logo
Sensing	• To create a program to run on a controllable device • To explain that selection can control the flow of a program • To update a variable with a user input • To design and create a project that uses inputs and outputs on a controllable device

UKS2 – Year B – End points	
Online Safety	• I can identify and reject inappropriate representations online • I can keep asking to get help when needed • I understand responsibilities online

	• I can describe some ways that build a positive reputation • I can explain the importance of self-regulating my use of technology • I can describe strategies for managing passwords • I can explain how impulsive communications cause problems • I can apply strategies to evaluating digital content • I can describe ways apps and services can conflict privacy • I can explain the importance of self-regulating my use of technology • I can demonstrate how to make references • I know the boundaries I should follow
Variables in Games	• To define a 'variable' as something that is changeable • To explain why a variable is used in a program • To choose how to improve a game by using variables • To design, create and evaluate a project that builds on a given example
Web Design: 3D Structures	• To know how use a search engine effectively • To know the different methods used to communicate online • To design and create a 3D model online • To design and create an effective website
Selection in Physical Computing	• To control a simple circuit connected to a computer • To write a program that includes count-controlled loops • To explain that a loop can stop when a condition is met and can be used to repeatedly check whether a condition has been met • To design and create a physical project that includes selection