

Bruche Primary School

COMPUTING



Our Intended Curriculum

Penketh 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 Handling information	Vocabulary- To be used daily.
Reception Skills	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 - Can use the internet with adult supervision to find and retrieve information of interest to them	Can create content such as a video recording, stories, and/or draw a picture on screen	Develops digital literacy skills by being able to access, understand and interact with a range of technologies	Internet, website, mouse, images, paint, technology, share, collect, set, sound, communicate, videos, photos, programme
Reception Knowledge	Autumn 1 Autumn and Seasons	Autumn 2 Celebrations	Spring 1 Animals	Spring 2 Life Cycles	Summer 1 Minibeasts	Summer 2 Occupations
	- Can turn on an Ipad, open a programme and follow instructions. - Can explain how to stay safe when using the internet.	Can follow teachers’ instructions when using an online interactive programme such as paint or draw.	Can write a variety of CVC words using a keyboard.	To collect information about the measurement of plants and see which was the best environment for growing in.	- Can use the I Pad and class cameras to take their own images - Can send a group class email to a different class and wait for a response.	- Can use ‘google’ to find out more information about animals and use the images to support their own representations. - Can explain who ‘hector’ is and why we use him.
E-Safety		Computer Skills		Promramming		Word Processing skills
Data Collection						
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, microwaves, cookers, keyboards, televisions, CD player. These should be modelled. Explicit teaching will be needed within this area when using interactive screen/table top computer and researching. This should take place in small, guided groups.						

KS1

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

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

To decide how my project can be improved	
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KS1 – Year 1 – 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 2 – 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

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 there 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	
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LKS2 – Year 3 – 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 4 – 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	
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UKS2 – Year 5 – 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 6 – 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
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	• 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