

Common Road Infant and Nursery School

Our Computing Curriculum

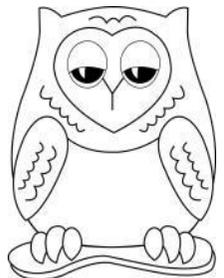
Our computing curriculum is guided by the **National Curriculum** (2014) for KS1 computing and the statutory early years foundation stage and development matters frameworks. Pupils should be taught to:

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.

Our intent is that the teaching of computing will equip our children to thrive in a rapidly changing digital world where work and leisure activities are increasingly transformed by technology. We will ensure that children are given the skills and tools to be able to embrace and utilise new technology in a socially responsible and safe way.

Computing skills enable children to be confident, creative and independent learners, and it is our intention that children have every opportunity to allow them to achieve this. We aim for our children to become independent users of computing technologies, gaining confidence and enjoyment from their activities. In a world where digital technologies create a vast amount of new job opportunities, we aim for our children to have the skills, knowledge and passion for computing to allow them to become successful in future employment.



EYFS - In the EYFS children will have a range of experiences using technology to support their learning. This may be using the interactive whiteboard to create a picture, cameras and iPads to record their findings or be role playing with technology in the role play area, for example on the 'mobile phone' Children will also access technology through whole class teaching.



Year 1

Autumn term

ICT (Laptops)

Introduction to computers, what a keyboard does, trackpad/mouse and typing using these skills to paint a picture electronically.

Coding (Beebots/ iPad)

Introduction to coding – programming and algorithms. Inputting simple directions/ creating algorithms.

E-Safety

Introduce Zip it, Block it, Flag it.

Managing online information

Privacy and security

Year 1

Spring term

Photography (iPads)

Linked to SID - iPad - Pic Collage for selfies and collages.

A good photo: portrait and landscape, focus, distance

Creating music (iPads – garage band)

E-Safety

Self-image and identity

Online reputation

Copyright and ownership

Year 1

Summer term

Animation (iPads – stop motion studio)

Presenting information - Producing an animated story

Coding (Beebots/iPad)

Recap and next steps for coding – programming, algorithms, debugging

E-Safety

Online relationships

Online bullying

Health, well-being and lifestyle



Year 2

Autumn term

ICT (Laptops)

Using the keyboard trackpad/mouse to create an information leaflet.

Coding (Beebots/ iPad)

Programming and algorithms. Inputting directions/ creating algorithms using coding for kids app.

E-Safety

Deepen understanding of Zip it, Block it, Flag it.

Managing online information

Privacy and security

Year 2

Spring term

E-mail (Laptops)

Compose an email and send it

Stop Motion Animation (iPad)

Stop motion studio app

E-Safety

Deepen understanding of:

Self-image and identity

Online reputation

Copyright and ownership

Year 2

Summer term

Graphs / Charts (Laptops – excel)

Presenting information – Producing a chart

Coding (Beebots/iPad)

Recap and next steps for coding – programming, algorithms, debugging

E-Safety

Deepen understanding of:

Online relationships

Online bullying

Health, well-being and lifestyle

Progression Overview



	Year 1	Year 2
Coding knowledge	See below.	<ul style="list-style-type: none"> • 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 <p>National curriculum 2014</p>
Computing knowledge	See below.	<ul style="list-style-type: none"> • Use technology purposefully to create, organise, store, manipulate and retrieve digital content • recognise common uses of information technology beyond school <p>National curriculum 2014</p>
Staying safe online (E-Safety)	<ul style="list-style-type: none"> • Recognise why we use passwords and why it is important to keep these private. • Learn how to handle IT equipment carefully. • Know what to do if something on the computer upsets them, zip it, block it, flag it. • Recognise that images posted online are available for all to see. • Know that images can be changed/manipulated • Recognise when and to who sharing images with is safe. • Recognise the dangers of publishing images online. 	<ul style="list-style-type: none"> • 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. <p>National curriculum 2014</p>

	<ul style="list-style-type: none"> • Identify some ways to stay safe on the internet. • To know that songs, music and media belong to others. • To understand that people need to have the permission of the owner to uses these different medias. • To know that using these without permission is not ok. • Learn how to become respectful and tolerant online citizens who understand that the rules that apply face to face also apply on line. • Learn that online bullying is not ok and what to do if they are worried about themselves or someone else. • Recognise that being online for long time periods is not healthy. 	
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	Autumn	Spring	Summer
Year Group	EYFS Introduced in nursery and deepened in reception.	EYFS Introduced in nursery and deepened in reception.	EYFS Introduced in nursery and deepened in reception.
Theme	All About Me	Once Upon a Time	One World
Overview	<p>Children use technology to explore changes to themselves over time. They look at and compare photographs of themselves as a baby to now.</p> <p>Children will use the iPad to take a photograph of themselves to support their comparisons.</p> <p>Children access the interactive screen during provision time and use a paint programme to create their own self-portraits.</p>	<p>Linked to the season of Spring children will observe signs of Spring life and use technology to record their findings. They will have a photograph diary of the life cycle of the frog using their frog spawn and to record the growth of their beans.</p>	<p>Children to have access in the classroom to some simple educational apps linked to phonics and maths. In provision children will be able to use the iPads to access an educational game.</p> <p>In whole class teaching the national geographic and DK find out websites will be used as sources of information to find out about other countries.</p>

		IWB games linked to lifecycles will be used as part of whole class teaching.	
Key vocabulary	Photograph Image Camera	Photographer Technology IPad	Encyclopedia App Non-Fiction

Year group – Year 1	Autumn 1	Autumn 2	Spring 1
Theme	Introduction to computers Paint/ word	Introduction to coding	Photography
Overview	Children are taught basic computer skills in this unit of work. Children learn about the key parts of a computer including the keyboard, trackpad/mouse and how to type (word process) They apply these skills using word and paint to create a simple typed document and picture.	Children are introduced to coding as a strand of the computing curriculum. In this strand children learn about algorithms and can follow and create simple algorithms that can be followed.	Children are introduced to iPads and to photography using these. They are taught about the types of photographs that can be taken and are taught about how images online can be spread/alterd and how to keep themselves safe online.
Previous knowledge	In the EYFS children have explored everyday uses of technology. They have seen technology used for teaching and have used technology such as iPads to record their work. Through play they have used televisions, mobile phones and other technologies to link this to their home experiences.		
Taught computing knowledge	<ul style="list-style-type: none"> How to turn on a laptop using the power button and log in using a simple username and password. 	<ul style="list-style-type: none"> What an algorithm is and what it can be used for. How to follow a simple algorithm to complete a task. 	<ul style="list-style-type: none"> How to take a photograph on an iPad in both landscape and portrait.

	<ul style="list-style-type: none"> • How to find and open a computer programme and open this. • What the mouse/trackpad does and how to use these for different tasks, applying these skills to create an online picture. • How to type simple words and sentences using the keyboard. • How to save their finished work. • To recognise different types of technology such as laptops, iPads. 	<ul style="list-style-type: none"> • How to create an algorithm on and off screen. • Programme a beebot to follow a simple algorithm. • Check the effectiveness of their algorithm. 	<ul style="list-style-type: none"> • Recognise when and why a photograph is not good quality. • How to retake a photograph improving the image. • How to take a photograph using the reverse camera (selfie) • Recognise when a photograph has been altered.
Specific vocabulary	Trackpad Mouse Laptop Technology Keyboard Program	Algorithm Debugging Coding	App Selfie Portrait Landscape

Year group – Year 1	Spring 2	Summer 1	Summer 2
Theme	Creating music	Stop motion animation	Building on coding
Overview	A simple introduction to technology and how this can be used to make music. Children will create their own pieces of music and share these with their friends.	Children are taught how to take and use a number of images to make a short stop motion film.	Children build their understanding of the coding strand of the computing curriculum. In this strand children learn about algorithms and can follow and create simple algorithms that can be followed.
Taught computing knowledge	<ul style="list-style-type: none"> • Know that technology can be used for a range of purposes including making music. • Know how to open the app or program that they are using to create their music. 	<ul style="list-style-type: none"> • How to take a high-quality photograph. • How to produce continuity in the images. 	<ul style="list-style-type: none"> • What an algorithm is and what it can be used for. • How to follow a simple algorithm to complete a task.

	<ul style="list-style-type: none"> • Know key features of the music programme they are using. • Experiment with different sounds and effects and the order they are used in. • Use the program and taught knowledge to create a short piece of music. 	<ul style="list-style-type: none"> • How to use a basic editing software to add the photographs to. 	<ul style="list-style-type: none"> • How to create an algorithm on and off screen. • Program a beebot on screen to follow an algorithm. • Check the effectiveness of their algorithm. • Fix an algorithm that does not work and recognise this is called debugging.
Specific vocabulary	Compose Copyright Ownership	Animation Editing Image/photograph	Algorithm Debugging Coding

Year group – Year 2	Autumn 1	Autumn 2	Spring 1
Theme	Advancing understanding of computers Word processing	Advancing coding	Advancing stop motion animation
Overview	Children are taught advancing computer skills in this unit of work. Children become more proficient in using key parts of a computer including the keyboard, trackpad/mouse and how to type (word process) They apply these skills using word and publisher to create a simple typed document.	Children are taught advancing coding as a strand of the computing curriculum. In this strand children apply algorithms and can follow and create simple algorithms that can be followed. They apply these to movable objects like beebots and to screens e.g. iPads.	Children are taught how to take and use a number of images to make a short stop motion film. The children will edit these and add features such as title screens and music.
Previous knowledge	In Year One children learned the basic skills in computing which enables them to log on and find the program they need. They have used computers to paint, word process and create. They have used iPads to take photographs and apps and beebots to learn the basics of coding. This provides a secure base for Year Two teachers to build upon.		
Taught computing knowledge	<ul style="list-style-type: none"> • How to turn on a laptop and log in using a simple username and password. 	<ul style="list-style-type: none"> • What an algorithm is and what it can be used for. 	<ul style="list-style-type: none"> • How to take a high quality photograph. • How to produce continuity in the images.

	<ul style="list-style-type: none"> • How to find and open a computer programme. • Use the mouse/trackpad effectively. • How to type sentences using the keyboard. • How to save/and print their finished work. 	<ul style="list-style-type: none"> • How to follow a simple algorithm to complete a task. • How to create an algorithm on and off screen. • Program a beebot on screen to follow an algorithm. • Check the effectiveness of their algorithm. • Fix an algorithm that does not work and recognise this is called debugging. 	<ul style="list-style-type: none"> • How to use a basic editing software to add the photographs to. • How to add music and titles using the editing software.
Specific vocabulary	Trackpad/Mouse Word process	Algorithm Debugging Coding	Animation Editing Image/photograph

Year group – Year 2	Spring 2	Summer 1	Summer 2
Theme	Introduction to emailing	Deepening computer knowledge Charts and graphs	Deepening coding skills
Overview	Children are introduced to emailing in this terms computing sessions. They will apply their knowledge of computers to open the email programme and use their word processing skills to write and send an email. They will explore the purpose of emails and look at details such as email addresses.	Children are taught advancing computer skills in this unit of work. Children become more proficient in using key parts of a computer including the keyboard, trackpad/mouse and how to type (word process) They apply these skills to create and deliver a survey, they will collate their results and create a graph/chart to record their findings.	Children are practising the application of prior knowledge and skills to deepen their understanding of coding. In this strand children apply algorithms and can follow and create simple algorithms that can be followed. They apply this to a range of contexts including, games and apps.
Taught computing knowledge	<ul style="list-style-type: none"> • Know that emails are a quick and cost effective method of communication. • Know that emails are sent using standard English. 	<ul style="list-style-type: none"> • How to turn on a laptop and log in using a simple username and password. • How to find and open a computer programme. 	<ul style="list-style-type: none"> • How to create an algorithm on screen. • Program on screen to make a sprite follow an algorithm.

	<ul style="list-style-type: none"> • Know that to send an email you will need the other persons email address. • How to send an email, reply and forward. 	<ul style="list-style-type: none"> • Use the mouse/trackpad effectively. • How to type sentences using the keyboard. • How to use the numbers on the keypad • How to save/and print their finished work. • How to change the way information is presented e.g. from chart to graph. 	<ul style="list-style-type: none"> • Check the effectiveness of their algorithm. • Fix an algorithm that does not work and recognise this is called debugging.
Specific vocabulary	Email	Graph (Bar/Pie) Tally Chart	Algorithm Debugging Sprite Direction