



Brookland Junior School

Computing Curriculum Overview

Intent

At Brookland Junior School, the computing curriculum is ambitious, coherently planned and sequenced, enabling all pupils to develop the knowledge and skills needed to thrive in an increasingly digital world. It reflects the national curriculum by developing computational thinking and creativity.

Pupils gain a secure understanding of key concepts such as algorithms, logic and data representation, and regularly design, write and debug programs. Learning is structured so that pupils know more, remember more and can do more over time, supporting strong progress from their starting points.

The curriculum ensures pupils become digitally literate, confidently using and evaluating technology while making links across subjects and understanding computing in a wider context. Online safety is embedded throughout, with pupils learning to use technology safely, respectfully and responsibly, and knowing how to recognise risks and report concerns.

The curriculum is organised into three strands—**Computer Science, Digital Literacy and Information Technology**—which are interwoven to develop pupils' deep, connected knowledge and skills, preparing them for the next stage of education and life in a digital world.

All pupils, including those with SEND, access an inclusive and well-resourced curriculum that removes barriers and promotes equality of opportunity. CPD specific coaching techniques have been embedded to support high quality inclusive teaching including: live modelling, PRIMM, project based learning and driver navigator paired working model. A range of technologies (iPads, laptops, desktops, apps, platforms etc) is used purposefully to support pupils in creating and presenting digital content across contexts.

Through computing, pupils develop as independent, resilient and collaborative learners, able to think logically, work creatively and communicate effectively in preparation for their next stage of education and life in modern Britain. Use of our learning platform 0365 and Teams is in line with the majority of Barnet secondary schools.

“Computing at Brookland develops your skills of determination and resilience. You learn to work collaboratively, stay organised and think logically to solve problems.”]

Computing Knowledge (Substantive): The key core facts of computing including understanding networks, knowing database structures. It also includes knowing the different parts of a computer, their inputs and outputs and their function. Pupils learn what servers do within a network. Programming terms are explicitly taught (e.g. variables, loops, and sequences) progressively over the key stage. Key knowledge also includes knowing online safety guidelines like the SMART rules. Understanding fake news, propaganda, and radicalisation. Pupils are taught the legal age restrictions on social media and gaming as well as the mental and physical risks of excessive screen time. Pupils are taught to know the impact of online trolling, bullying, and harassment and recognise online grooming and potential risks at an age-appropriate level.

Computing Skills (Disciplinary): the practical skills used to apply that information, navigating different devices platforms and apps. Pupils learn how to write and debug code, filter search engines, create animations, record audio, edit videos, and format spreadsheets. Pupils learn how to present information in different ways (graphs, PowerPoints, Word documents). Pupils use teamwork skills to collaborate on our online platform 0365/Teams and evaluate their work. They also learn how to be digitally literate 'street wise' online and be a positive digital citizen.

Implementation

Computing at Brookland is taught weekly through a broad, ambitious and well-sequenced curriculum that builds pupils' knowledge and skills progressively from Key Stage 1 to Key Stage 2. Lessons are tailored to Brookland pupils and regularly updated to reflect developments in technology, ensuring learning remains relevant and engaging. Pupils develop secure understanding of programming, digital systems and information technology, and are given opportunities to apply and transfer their learning across the curriculum, for example in Design and Technology projects such as Year 6 LEGO Robotics.

Enrichment opportunities are provided, including Online Safety Week, further enhance pupils' engagement and enthusiasm for computing.

"We learn how to code and program and debug errors. We have to be able to use lots of different technology and programmes."

Online safety is a core, embedded strand of the computing and PSHE curriculum. A carefully sequenced approach ensures pupils understand how to stay safe online, recognise risks and know how to seek support. The SMART rules and Acceptable Use Policy are revisited annually, supported by lessons, assemblies, Thinking Book reflections and workshops led by external specialists.

"We know how to stay safe online and treat others with respect just as you would in real life."

A range of clubs, enrichment opportunities and curriculum links provide further opportunities for pupils to apply their skills, including projects such as the Brookland Magazine. Homework platforms (e.g. MyMaths, EdShed, Teams) support independent learning and consolidation.

The school is well resourced, with a computing suite, iPads and laptops used flexibly to support high-quality teaching, including targeted interventions and SEND provision. All pupils can acquire access to technology through the loaning of laptops to assist with homework.

Peer support is encouraged and utilised in lessons to create a culture of support in lessons. Whole school meetings provide opportunity for pupil voice which is used to review and refine the curriculum, ensuring it remains engaging and effective.

A computing vocabulary progression map ensures challenging subject specific vocabulary is taught throughout the curriculum, with 3 key words identified and taught in every lesson.

Recap and retrieval activities take place at the start of every unit and every lesson to make sure learning is revisited and remembered.

Impact

Thinking Books provide pupils with a dedicated space to reflect on their learning, particularly in relation to online safety and themed focus weeks, enabling them to articulate their understanding and develop their awareness of key issues.

Pupil work can be saved, accessed and reviewed by teachers on 0365 or Pupil Shared network space.

In lessons, teachers use a range of formative assessment (AfL) strategies, including targeted questioning and practical activities, to check pupils' understanding, identify misconceptions and adapt teaching to support progress. This ensures that learning is responsive and builds securely over time.

Key knowledge and skills identified within the curriculum are assessed through regular, structured assessment points. Teachers complete half-termly assessments and undertake deeper termly reviews to evaluate pupils' progress against expected outcomes, ensuring that any gaps in learning are identified and addressed promptly.

At the end of the academic year, class teachers provide a summative judgement in computing, alongside a written report comment, giving a clear overview of each pupil's attainment and progress.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3	DL Online Safety Identify how to use technology safely and respectfully, keeping personal information private IT Our network and presenting information on computers Touch Typing BBC Recognise familiar forms of input and output devices and how they are used	CS Coding: Whack a Witch Scratch Design, write and debug programs that control or simulate events Explain how some algorithms work using logical reasoning	CS Branching Databases j2data Select and present data and information	DL Text and graphics 0365 Identify and recognise that not all websites are as reliable as each other To select, collect and present data and information	IT Creating and sharing MS Teams & PPT Share data and information within a computing network	IT Exploring Simulations/Combining software Loti Bots With support select and use a variety of software to accomplish goals
Year 4	DL Online Safety Recognise that people sometimes behave differently online, including by pretending to be someone they are not.	CS Data Handling Excel 0365 Make efficient use of input and output devices	CS/IT Coding a Micro:bit Micro:bits Decompose programs into smaller parts Detect and correct errors in algorithms and programs	IT Animation I Can Animate With support select and use a variety of software on a range of digital devices to accomplish goals	CS Branching Databases j2data Recognise how the internet is a large network of computers and that information can be shared between computers via databases	IT Creating, designing and sharing presentations 0365 PPT/ MS Teams DL Recognise and identify how results are selected and ranked by search engines
Year 5	DL Online Safety Evaluate online friendships and sources of information including awareness of the risks associated with people they have never met.	CS Smoking Cars Scratch Explore cause and effect algorithms where particular results occur following user actions	CS IT Databases J2Data Independently collect, design and create data and information to accomplish goals	IT Inputs and Outputs Micro:bits Collect and evaluate information collected by input devices such as light and sound sensors	IT How Computers and the Internet Work Websites & MS Teams Model and explain what servers are and how they provide services to a network Utilise search technologies precisely to find exact content	IT/CS Controlling Devices Lego Robots Design and write programs to accomplish goals, including control and simulating physical systems

Year 6	DL Online Safety Identify a range of concerns about content and contact on a variety of mediums (including trolling, online bullying and harassment) and know how to report issues DL Filter searches effectively and be discerning when evaluating digital content	IT Collaborating, creating and designing Multi-Media Presentations MS Teams, O365 PPT Collaborate and communicate on computer networks	CS Spreadsheets – Theme Park Project Excel O365 Collecting, analysing, evaluating and presenting data and information for a given audience	CS Coding Advanced Scratch Create variables, sequences, selection and repetition codes in programs to solve real life problems Detect and correct errors in algorithms to make programs more efficient	IT Stop-motion Animation To independently select, use and edit a variety of software on a range of digital devices to accomplish goals	IT Controlling physical systems Micro:bits Create and design input and output devices, including sensors, to create physical simulations (robotics) which solve problems
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The National Curriculum KS2

Pupils **design, write, test and debug programs** to accomplish specific goals, applying **computational thinking** by **decomposing complex problems into smaller, manageable steps**. They develop an understanding of **algorithms** through the use of **sequence, selection and repetition**, while working with **variables, inputs and outputs** to create purposeful digital outcomes.

Pupils use **logical reasoning** to predict, explain and evaluate the behaviour of programs, identifying and correcting errors through systematic debugging. They explore how **computer networks and the internet** provide opportunities for communication, collaboration and access to information.

Pupils develop **digital literacy** by using **search technologies effectively**, understanding how information is selected and ranked, and critically evaluating the reliability and validity of online content. They select, combine and apply a range of software and digital tools to **collect, analyse, evaluate and present information** for different audiences and purposes.

Throughout their learning, pupils demonstrate responsible digital citizenship by using technology **safely, respectfully and responsibly**, understanding how to protect personal information and report concerns or inappropriate online behaviour. They become confident, creative and independent users of technology who can apply their knowledge to solve real-world problems.

Key Skills and Knowledge Progression

Year 3

COMPUTER SCIENCE		INFORMATION TECHNOLOGY			DIGITAL LITERACY	
Coding CS	Algorithms CS	Inputs and Outputs IT	Understanding computer networks IT	Multi-media goals IT	Online safety DL	Searching online DL
Designing, Writing and Debugging	Explaining how algorithms work and detecting problems	Sequencing, selecting and repeating inputs and outputs	Examine and analyse computing networks	Selecting and applying a range of devices and software to accomplish goals	Identifying and applying how to be safe online See PSHE	Searching and selecting information effectively online
Design, write and debug programs that control or simulate events	Explain how some algorithms work using logical reasoning	Recognise familiar forms of input and output devices and how they are used	Share data and information within a computing network	With support select and use a variety of software to accomplish goals Select, collect, and present data and information	Identify how to use technology safely and respectfully, keeping personal information private Recognise acceptable and unacceptable behaviour online	Use simple search technologies Identify and recognise that not all websites are as reliable as each other

Year 4

COMPUTER SCIENCE		INFORMATION TECHNOLOGY			DIGITAL LITERACY	
Coding CS	Algorithms CS	Inputs and Outputs IT	Understanding computer networks IT	Multi-media goals IT	Online safety DL	Searching online DL
Designing, Writing and Debugging	Explaining how algorithms work and detecting problems	Sequencing, selecting and repeating inputs and outputs	Understanding computing networks	Using a range of devices and software to accomplish goals	Knowing how to be safe online See PSHE	Searching information effectively
Decompose programs into smaller parts Select, use and combine other software that accomplish given goals (use other programs when coding)	Detect and correct errors in algorithms and programs using logical reasoning	Make efficient use of input and output devices	Recognise how the internet is a large network of computers and that information can be shared between computers via databases	With support select and use a variety of software on a range of digital devices to accomplish goals Independently collect, design and create data and information to accomplish goals	Evaluate online friendships and sources of information including awareness of the risks associated with people they have never met. Know where to go for help and support about contact or content online or on other technologies	Recognise and identify how results are selected and ranked by search engines

Year 5

COMPUTER SCIENCE		INFORMATION TECHNOLOGY			DIGITAL LITERACY	
Coding CS	Algorithms CS	Inputs and Outputs IT	Understanding computer networks IT	Multi-media goals IT	Online safety DL	Searching online DL
Designing, Writing and Debugging	Explaining how algorithms work and detecting problems	Sequencing, selecting and repeating inputs and outputs	Understanding computing networks	Using a range of devices and software to accomplish goals	Knowing how to be safe online See PSHE	Searching information effectively
Design, input and test increasingly complex instructions or devices Design and write programs to accomplish goals, including control and simulating physical systems	Design, write and test increasingly complex instructions which can be repeated or looped Explore cause and effect algorithms where particular results occur following user actions Explain how complex algorithms can make a program more efficient	Collect and evaluate information collected by input devices such as light and sound sensors	Model and explain what servers are and how they provide services to a network Share and transfer data to a third party or another person	Independently select and use appropriate software for a given task Independently select, design and create content for an audience Collecting, analysing, evaluating and presenting data and information for a given audience	Evaluate online friendships and sources of information including awareness of the risks associated with people they have never met.	Filter while using search technologies Utilise search technologies precisely to find exact content

Year 6

COMPUTER SCIENCE		INFORMATION TECHNOLOGY			DIGITAL LITERACY	
Coding CS	Algorithms CS	Inputs and Outputs IT	Understanding computer networks IT	Multi-media goals IT	Online safety DL	Searching online DL
Designing, Writing and Debugging	Explaining how algorithms work and detecting problems	Sequencing, selecting and repeating inputs and outputs	Understanding computing networks	Using a range of devices and software to accomplish goals	Knowing how to be safe online See PSHE	Searching information effectively
create programs which use variables Create variables, sequences, selection and repetition codes in programs to solve real life problems Solve problem by decomposing	Explain increasingly complex algorithms Detect and correct errors in algorithms to make programs more efficient	Create and design input and output devices, including sensors, to create physical simulations (robotics) which solve problems	Collaborate and communicate on computer networks Begin to use internet services to share creations online or with a third party	Collecting, analysing, evaluating and presenting data and information for a given audience	Identify a range of concerns about content and contact on a variety of mediums (including trolling, online bullying and harassment) and know how to report issues	Filter searches effectively and be discerning when evaluating digital content

Online Safety Curriculum (in line with updated 2025 RSHE Guidance)

Whole School Approach:

- Annual **Safer Internet Day/Online Safety Week** (including CEOP Ambassadors/ECP activities).
- Termly Online Safety Assemblies led by the Computing/PSHE Subject Leader.
- Online safety taught through Computing, PSHE/RSHE, safeguarding themes and enrichment activities.
- Curriculum supports pupils to become **safe, respectful, responsible and active digital citizens**.
- Explicit teaching of **risk recognition, resilience, critical thinking, consent, healthy relationships, media literacy and safeguarding**.
- Opportunities for pupils to understand how to **identify, assess and manage online risk**, seek support and report concerns using trusted reporting systems.

Key outcomes - Online Safety Key Knowledge and Skills

Year 3
• To know that the same principles of kindness, respect and consideration apply to online relationships as they do to face-to-face relationships, including when communicating anonymously. • To know that the internet is an important part of everyday life and offers many benefits for learning, communication and entertainment, whilst also presenting potential risks. • To know how online actions can affect themselves and others, how to demonstrate respectful and responsible behaviour online, and how to keep personal information safe and private. • To know how and where to report online concerns, access support from trusted adults and use online reporting tools, including reporting abuse functions and the SMART Rules to stay safe online.
Year 4
• that people sometimes behave differently online, including by pretending to be someone they are not. • the rules and principles for keeping safe online, how to recognise risks, harmful content and contact, and how to report them. <u>Also to Include:</u> • Communicate respectfully and kindly online (including gaming) • Finding a balance with screen time and other activities
Year 5
• how to critically consider their online friendships and sources of information including awareness of the risks associated with people they have never met.

- about the benefits of rationing time spent online, the risks of excessive time spent on electronic devices and the impact of positive and negative content online on their own and others' mental and physical wellbeing.
- why social media, some computer games and online gaming, for example, are age restricted. [LINK TO GAMBLING YGAM](#)

Also to Include:

- Communicate and speak kindly others online (including social media) (Be Internet Legends)
- Be aware of how sharing information online can be positive but also potentially damaging and have negative impacts (NSPCC)
- THINK before you type: Is it true, helpful, illegal, necessary, kind
- Behaving sensibly, respectfully and in moderation when using messaging services (WhatsApp)

Year 6

- that the internet can also be a negative place where online abuse, trolling, bullying and harassment can take place, which can have a negative impact on mental health.
- how to be a discerning consumer of information online including understanding that information, including that from search engines, is ranked, selected and targeted.

Also to include:

- Understand the importance of permission - seeking before posting images online (WhatsApp)
- Identify fake news and understand how propaganda can lead to radicalization and extremism
- Be aware of how sharing unhelpful content can be harmful (scare shares)
- Identify how potential grooming of young people can occur online and how to seek help