Curriculum Intent Statement

As subject leaders we strive to adopt and construct a curriculum that is ambitious and aspirational; designed to give **all** learners and groups of learners, including the most disadvantaged and those with SEND and higher levels of needs, the knowledge and cultural capital they need to succeed in their future. We continually strive to make adaptations and reasonable adjustments to enable all our pupils to access our school curriculum and we aim to provide a range of enhancement opportunities to engage all children in their learning.
We recognise that all pupils are entitled to a quality of provision that will enable them to achieve their full academic and personal potential. We firmly believe that childhood should be a happy, investigative and enquiring time in our lives where there are no limits to curiosity and where all children are exposed to new experiences and knowledge through a varied curriculum.

In line with the 2014 National Curriculum for Computing, our aim is to provide a high-quality computing education which equips children to use computational thinking and creativity to understand and change the world. The curriculum will teach children key knowledge about how computers and computer systems work, and how they are designed and programmed.

Learners will have the opportunity to gain an understanding of computational systems of all kinds, whether or not they include computers. By the time they leave Brookhurst, children will have gained key knowledge and skills in the three main areas of the computing curriculum: computer science (programming and understanding how digital systems work), information technology (using computer systems to store, retrieve and send information) and digital literacy (evaluating digital content and using technology safely and respectfully). The objectives within each strand support the development of learning across the key stages, ensuring a solid grounding for future learning and beyond.

Aims of the National Curriculum

Purpose of study

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming.

Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

Aims

The national curriculum for computing aims to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology.

COMPUTING LONG TERM PLAN

Subject Content	
KS1	**KS2**
• 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	• 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.

Curriculum Implementation Statement

At Brookhurst, computing is taught either as a discrete subject or as an integral part of the wider curriculum. This ensures children are able to develop depth in their knowledge and skills over the duration of each of their computing topics.

We have a laptops, iPads and Chromebooks that children use across the year in their weekly computing lesson which is supported by the interactive whiteboard in each class. Additional to this, we have a class set of micro-bots and We-Do Lego, which allow them to explore learning in exciting ways. All this equipensures that all year groups have the opportunity to use a range of devices and programs for many purposes across the wider curriculum, as well as in discrete computing lessons. Employing cross-curricular links motivates pupils and supports them to make connections and remember the steps they have been taught.

The implementation of the curriculum ensures a balanced coverage of computer science, information technology and digital literacy. The children will have experiences of all three strands in each year group, but the subject knowledge imparted becomes increasingly specific and in depth, with more complex skills being taught, thus ensuring that learning is built upon. For example, children in Key Stage 1 learn what algorithms are through the use of bee-bots, which leads them to the design stage of programming in Key Stage 2, where they design, write and debug programs, explaining the thinking behind their algorithms.

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Online Safety

All year groups begin the year revisiting key online safety skills to ensure that all pupils can use technology safely while developing their computer science and digital literacy skills.

In addition to the discrete sessions at the beginning of the year, online safety underpins all computing lessons and is revisited throughout the year. Consistent and regular teaching of online safety will ensure that all pupils are able to utilise the skills and knowledge taught in computing lessons while knowing how to stay safe online in and out of school.

Below is an overview of the key Online Safety skills covered in our computing lessons:

- How do I use technology safely, respectfully and responsibly?
- Who do I talk to if I feel unsafe on the internet?
- What is personal information?
- How do we keep personal information safe?
- How do we search safely on the internet?
- How can we create a safe password?
- How do I know if a website is safe?
- How do we communicate safely using technology?
- How do we know online content is appropriate for us to use?
- How do we recognise acceptable and unacceptable behaviour online?
- What information do we want to share on the internet?
- Is everything on the internet true?

Our online safety skills are supported in a cross curricula approach with significant links to RSE. Children will be able to identify when they are feeling unsafe, what to do in this situation and have listed trusted adults they can talk to.

COMPUTING LONG TERM PLAN

EYFS	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	In the EYFS curriculum, Computing is no longer a stand alone 'subject'. As such, through discussions and staff meetings we have discussed					
Year [illegible]	Online Safety [illegible]	Creating Media [illegible]	Creating Media [illegible] This topic is covered in a cross curricula approach with DT [illegible]	Data and information [illegible]	Programming [illegible] Computing [illegible]	Programming [illegible]
	[illegible]	Hardware – Laptops [illegible]	[illegible]	Hardware – Laptops [illegible]	Hardware – Mircobits Software – Hardware – Laptops [illegible]	Hardware – Laptops, Microbit [illegible]

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Coverage of curriculum statements by term.

Key Stage 1	Year 1						Year 2					
	A1	A2	Sp1	Sp2	Su1	Su2	A1	A2	Sp1	Sp2	Su1	Su2
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												

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Lower Key Stage 2	Year 3						Year 4					
	A1	A2	Sp1	Sp2	Su1	Su2	A1	A2	Sp1	Sp2	Su1	Su2
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.	■						■					

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Upper Key Stage 2	Year 5						Year 6					
	A1	A2	Sp1	Sp2	Su1	Su2	A1	A2	Sp1	Sp2	Su1	Su2
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.	■						■		■			

Curriculum Impact

Our approach to the curriculum results in a fun, engaging, and high-quality computing education. The quality of children's learning is evident from online content, assessments and discussions with children from reception to year 6.

Much of the subject-specific knowledge developed in our computing lessons equip pupils with experiences which will benefit them in secondary school, further education and future workplaces. From research methods, use of presentation and creative tools and critical thinking, computing at Brookhurst aims to give children the building blocks that enable them to pursue a wide range of interests and vocations in the next stage of their lives.