Subject Strategy

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COMPUTING   *'Alan Turing gave us a mathematical model of digital computing that has completely withstood the test of time. He gave us a very, very clear description that was truly prophetic.'* George Dyson

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Being a Computer Scientist

Historians are people who:

Have competence in coding for a variety of practical and inventive purposes, including the application of ideas within other subjects.

Have the ability to connect with others safely and respectfully, understanding the need to act within the law and with moral and ethical integrity.

Have an understanding of the connected nature of devices.

Have the ability to communicate ideas well by using applications and devices throughout the curriculum.

Have the ability to collect, organise and manipulate data effectively.

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Curriculum Intent

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COMPUTING Intent

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At Holly Park, we intend to offer our pupils new and exciting experiences through activities that are designed to build resilience, confidence and self-esteem. We recognise that a curriculum has to be broad, balanced and offer pupils opportunities to grow and make progress as individuals from whatever their starting points may be. The curriculum promotes all forms of equality and fosters greater understanding of and respect for people of all faiths and those of no faith, races, genders, ages, disability and sexual orientations, It keeps pupils safe from the dangers of abuse, sexual exploitation, radicalisation and extremism. It contributes to pupils' behaviour and welfare, including their physical, mental and personal well-being, safety and spiritual, moral, social and cultural development. It provides both skills-based as well as knowledge-based learning and ensures continuity and progression within the school and between each phase of education. Our curriculum is supported by enrichment days, weeks and extra-curricular activities. We want to make learning fun, practical and exciting to ensure that it is embedded in the long-term memory. The curriculum values prior knowledge and moves on from this point to extend learning.

Our curriculum is based upon 4 main principles:

Creativity:
- Is inclusive, exciting and engaging.
- Stimulates creative thinking and problem solving.
- Discovers, nurtures and celebrates children's talents.

Ambition:
- Teaches the essential skills of English and Mathematics across the curriculum.
- Is broad and balanced.
- Teaches resilience and the ability to persevere.
- Is well sequenced, progressive and memorable.

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In line with the 2014 National Curriculum for Computing, our aim at Holly Park Primary School 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 Holly Park, 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.

Through the study of computing, children will be able to develop a wide range of fundamental skills, knowledge and understanding that will equip them for the rest of their lives.

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- Prepares children for the next stage of their education.

Curiosity:
- Reflects our diverse community.
- Develops effective communication skills
- Fosters enthusiasm and a love of learning.

Health:
- Supports British Values and our school values.
- Encourages a mentally and physically healthy lifestyle.
- Nurtures and supports social and emotional development.

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COMPUTING Implementation	COMPUTING Impact
At Holly Park, computing is taught using a combination of both blocked and ongoing curriculum approaches. This ensures children are able to develop depth in their knowledge and skills over the duration of each of their computing topics. In order to ensure progression and continuity throughout the school, the school has developed a curriculum progression document which outlines curriculum coverage, progression and context of computing as a discreet subject and across the curriculum. We have a set of iPads and Chromebooks to ensure 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 also 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. Computing EYFS………………………….. **Computing Key Stage 1** Pupils will be taught to:	We want our children to leave Holly Park with the behaviours that they need to succeed in the world. They will be confident and successful lifelong learners. **We want to help our pupils to:** Develop lively, enquiring minds, an ability to question and argue rationally and an ability to apply themselves to tasks and physical skills Acquire understanding, knowledge and key skills relevant to school, adult life and employment in a fast-changing world Be able to use language and number effectively Develop personal moral values, respect for religious values and tolerance of other races, religions and ways of life Understand the world in which they live and the inter-dependence of individuals, groups and nations Appreciate human achievements and aspirations – a sense of 'awe and wonder' Know and remember more **For the best impact we intend that we have:** A clearly defined, high quality curriculum Effective delivery The curriculum being taught and learned as intended

- 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

Computing Key Stage 2

Pupils will be taught to:
- 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

Subject Strategy

● Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	

COMPUTING PEDAGOGY

- Pupils are aware of how to use technology safely, respectfully and collaboratively
- We have high expectation that all children are proficient in using technology that we provide in lessons.
- We provide pupils the opportunity to reflect on prior learning
- We ensure that pupils are exposed to both theory and practical opportunities to ensure they understand the concepts.
- Discussion is used to engage and connect pupils and as a means to check prior knowledge.
- We model processes, using key vocabulary to strengthen pupils' understanding.
- We explain our computational thinking when problem solving.
- We apply our knowledge through practical activities using a range of technology across different Key Stages.
- We use questions to identify misconceptions and use this to inform future learning.
- We provide live feedback to encourage pupils to evaluate their learning and address any errors or inaccuracies.
- We can save our work, where appropriate, in order to evidence our learning.