

HIGH LITTLETON CHURCH OF ENGLAND PRIMARY SCHOOL

COMPUTING CURRICULUM

Principles

Learning is a change to long-term memory. To this end, our aim is to ensure that our children experience a wide breadth of study and will have committed to their long-term memory an ambitious body of procedural and semantic knowledge (knowledge and skills).

Curriculum Intent

Curriculum drivers shape our curriculum breadth. They are derived from an exploration of the backgrounds of our children, our beliefs about high quality education and our values. Cultural capital gives our children the vital background knowledge required to be informed and thoughtful members of our community who understand and believe in British Values.

At High Littleton Church of England Primary School, we ensure that a high-quality computing education equips the children to use computational thinking and creativity to understand and change the world. Our children 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, children will be equipped to use information technology to create programs, systems and a range of content. Computing will also ensure that children become digitally literate – able to use, and express themselves and develop their ideas through information and communication technology.

Breadth of Study

Key Stage 1

Children will 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.

Key Stage 2

Pupils should 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
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Our curriculum distinguishes between subject topics and *threshold concepts* which tie together the subject topics into meaningful *schema*. The same concepts are explored in a wide breadth of topics. Our *forwards and backwards engineering* of the curriculum allows children to return to the same concepts over and over again, gradually building their understanding of them.

Threshold Concepts

We want our children to:

- understand and apply the concepts of logic, algorithms and data representation
- analyse problems and have repeated practical experience of writing computer programs
- evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- be responsible, competent, confident and creative users of information and communication technology.

Milestones

These are the goals that the children should reach to show that they are meeting the expectations of our curriculum.

At High Littleton Primary School, we help pupils progress in computing by:

- carefully sequencing the knowledge that they need to understand computing concepts in our long term plans
- by providing the vocabulary that they need to articulate their understanding of computing
- by providing the children with *deliberate practice* activities that will help them to make progress towards the milestones and remember what they have learnt

Assessment

We assess the outcomes for computing through our POP tasks which are built into our planning to help us assess how well and how deeply pupils know and understand what we have taught and what the children have learnt.