

Computing at The Federation of Priddy and St. Lawrence's C of E Primary School

Rationale

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.

Progression in Computing involves developing skills and knowledge through:

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- ❖ Using an increasing range of programs and systems
- ❖ Developing more complex coding and programming skills
- ❖ Become more creative in their application of skills
- ❖ Increasing independence for all the above

End Points

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Key stage 1 Pupils should be taught:

- ❖ 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:

- ❖ 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

Intent

At Priddy and St. Lawrence's, we believe that it is vital our children are given the opportunities to gain knowledge and develop skills that will equip them for an ever-changing digital world. Technology is everywhere and will play a pivotal role in our pupil's lives. Therefore, our computing curriculum is designed to enable pupils to be responsible, confident, computational thinkers.

Closely following the aims of the National Curriculum for computing, our computing curriculum aims for all pupils to show progression of skills in four different strands. These strands are internet safety, understanding technology (using computer systems to store, retrieve and send information), digital literacy (evaluating digital content and using technology safely and respectfully) and computer science (programming and understanding how digital systems work).

Our intent is to inspire children to be computational thinkers by ensuring that all children:

- ❖ 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.

Implementation

To inspire our children to be computational thinkers, our rigorous and well-organised Computing curriculum provides the children with many purposeful opportunities to follow the four computing strands: Understanding Technology, Digital Literacy, Computer Science and Internet Safety. The children will have experiences of each of these strands in every year group, but the subject knowledge imparted becomes increasingly specific and in depth, thus ensuring that learning is built upon. Using a wide variety of resources to motivate and inspire our children, the Computing curriculum ensures a consistent and systematic approach to teaching and learning across all cohorts whilst employing cross-curricular links to support the children to make connections and remember the steps they have been taught. We strongly believe that carefully selected enrichment opportunities are key to providing all pupils rich experiences to enhance their learning.

Impact

We encourage our children to enjoy and value the curriculum we deliver. We will constantly ask the WHY behind their learning and not just the HOW. We want learners to discuss, reflect and appreciate the impact computing has on their learning, development and wellbeing. Finding the right balance with technology is key to an effective education and a healthy life-style. We feel the way we implement computing helps children realise the need for the right balance and one they can continue to build on in their next stage of education and beyond. We encourage regular discussions between staff and pupils to best embed and understand this. The way pupils showcase, share, celebrate and publish their work will best show the impact of our curriculum.

As a Computer Scientist leaving The Federation of Priddy and St. Lawrence's, every child will:

- ❖ understand and apply the fundamental principles and concepts of computer science (including abstraction, logic, algorithms and data representation)
- ❖ analyse problems in computational terms and have repeated practical experience of writing computer programs in order to solve such problems
- ❖ 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