Curriculum Guide

Computing

National Curriculum Aims

The 2014 National Curriculum for Computing aims to ensure that all pupils:

Are able to understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms, and data representation.

Pupils can analyse problems in computational terms and have repeated practical experience of writing computer programs in order to solve such problems.

Pupils are able to evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems.

All pupils are safe, responsible, competent, confident, and creative users of information and communication technology.

Intent

At HPS, Computing is integral to everyday life and plays an immeasurable part in our children's futures. The teaching of Computer Science provides our children with the skills to ensure that they are computational thinkers who are ready to face the exciting challenges of, and thrive as creators and collaborators in a growing technological world. Children value the importance of being a responsible digital citizen and think carefully about the contributions they make online towards their digital footprint. Computing lessons ensure that pupils experience a rich and broad curriculum, allowing them to express themselves and sparking their curiosity whilst further developing their knowledge through information technology.

Implementation

Our curriculum for Computing is sequenced appropriately across the three areas of computing (i.e., Computer Science, Digital Literacy, and IT) with natural links to other curriculum areas. Planning demonstrates a substantive and disciplinary approach to teaching. Children develop fluency in using technology for a range of purposes.

Staying safe online is integrated into all areas of the curriculum. It is taught specifically in computing and discretely within PSHE. Computing lessons focus on collaboration and creativity by providing extended periods of time to work independently and with others to solve problems and develop the knowledge and skills required to be computational thinkers. Strong links are maintained with parents and materials are shared routinely.

Impact

The impact and measure of this is to ensure that children at HPS are equipped with relevant and high-quality computing skills that they will need in a future world where technology plays an increasingly important role in our everyday lives and will be essential in almost every possible area of future employment.

Teachers use formative assessment from their observations in the classroom and their evaluations of the activities children undertake.

What children say about their learning will also be a good measure of their success in learning from the Computing curriculum. We also expect all children to be able to demonstrate a very sound understanding of how to keep themselves and others safe on-line through what they say and what they do.

Knowledge and Skills

There are three aspects to the computing curriculum:

- **Computer Science (CS)**: 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.
- **Information technology (IT)**: Pupils are equipped to use information technology to create programs, systems, and a range of con- tent.
- **Digital Literacy (DL)**: Digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology.

Our curriculum for Computing promotes:

Computational thinking and creativity. Links with Mathematics, Science, and Design & Technology, and provides insights into both natural and artificial systems.

Creativity

Our curriculum for Computing has many opportunities for children to demonstrate creativity either independently or collaboratively through a range of projects.

Children learn to create and debug their own programs through the use of block coding such as Scratch and Scratch Jr; and in Key Stage 2 though the text-based languages HTML and Python.

Through cross-curricular learning, children in Key Stage 2 design and create websites, blogs and short movies. These are shared with and critiqued by their peers. Digital leaders in Key Stage 2, will explore the use of green screen technology to create and edit films.

Assessment

At HPS tracking children's progress throughout their school life is vital in order to establish their acquisition of knowledge and skills.

Teachers use the Kapow scheme to teach units of work sequentially and progressively. All units of work model the use of computing skills by videos; this supports with addressing misconceptions can be identified and addressed appropriately by the teacher.

Teachers will assess children against key objectives in Computing twice times a year using their teacher judgement and work produced by the children. Children will be assessed against the criteria: working towards, working at and working above.

Teachers record pupils learning in computing by saving examples of completed work electronically in class folders. They use a variety of ways to evidence the children's learning including video clips and photographs.