



Computing Rationale

“A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. 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.” (National Curriculum, 2013)

Intent

- A balanced computing curriculum at Lothersdale Primary School enables the children to develop their understanding and use of technology through practical and exploratory opportunities using deliberate practice to develop their understanding.
- As they move through school, they develop an understanding of how technology and digital systems work.
- Children develop their digital literacy, showing that they know how to use technology respectfully and safely.
- Children engage and develop a deep understanding of computer science, knowing how to develop and create their programs for a range of purposes.
- The computing curriculum aims to develop children as computational thinkers to enable them to solve problems across the whole curriculum and life in general.

Implementation

- The children are taught a balanced curriculum, supported by Purple Mash resources, that is sequenced appropriately across the three areas of computing with natural links to other curriculum areas.
- Discreet computing is taught in blocked units.
- 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 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.

Impact: to be reviewed at the end of each year

There are three aspects to the computing curriculum:

- Information technology (IT)
- Computer Science (CS)
- Digital Literacy (DL)

Substantive and disciplinary knowledge in computing

Substantive knowledge Substantive knowledge in computing is understanding how to use technology, how to be safe and knowing how to program. This is developed through deliberate practice and by children applying their knowledge of how to be computational thinkers.

In order to develop as computational thinkers, children engage with computational concepts and approaches:

Concepts	Approaches
<ul style="list-style-type: none">□ Logic: predicting and analysing• Algorithms: making steps and rules• Decomposition: breaking down into parts• Patterns: spotting and using similarities• Evaluation: making judgements	<ul style="list-style-type: none">□ Tinkering: experimenting and playing• Creating: designing and making• Debugging: fixing and finding errors• Persevering: keeping going• Collaborating: working together

Disciplinary knowledge

Disciplinary knowledge in computing is the use and interpretation of substantive knowledge in order to develop original digital content and programs.

Creativity

Computing is an area of the curriculum that has many opportunities for children to demonstrate creativity through developing their own programs, systems and digital content whilst applying their developing computational thinking. Computing has opportunities for natural cross-curricular learning; examples include presenting data in tables, researching in History or writing instructions in English.

Assessment

Assessment in computing consists of a prior knowledge, low stakes quiz which enables children to demonstrate connected knowledge held in the long term memory. This also helps to identify any misconceptions to be addressed. Programs are created on digital devices and as such are not recorded in the same way as written learning. Feedback is given verbally to children in order to support them to progress within and across lessons. Children recall their knowledge at regular intervals to ensure an alteration to long term memory. Any forgotten or gaps in knowledge are addressed immediately.

Reviewed March 2022 - CG