

# Greenfield Primary school

## Computing

### Intent

At Greenfield, we understand that information and communication technology is a fundamental part of the National Curriculum and a key skill for everyday life. We aim to provide the children at Greenfield with a quality education in this subject, which utilises new technology in a socially responsible and safe way. We wish to develop a passion for computing and provide children with opportunity to enhance their knowledge, skills and understanding through different types of media, whilst reinforcing online safety throughout.

In regards to online safety, GDPR will play an important role in allowing the children to recognise what information is personal to them and who and when it is safe to share it. To succeed in this area, we must ensure that children have a clear understanding of the meaning of personal information and recognise their own role in safeguarding this. Children are taught about their own digital footprint, and given advice and support in this area. Having a strong understanding of these things will allow children at Greenfield to safely access modern technologies and keep themselves safer in an increasingly online world. We use technology to support learning across the entire curriculum and efficiently support our school values. Our aim is to help our children understand they are not only part of the school and village community, but also wider members of a global community as responsible digital citizens.

Our curriculum strives to develop resilient, reflective, creative and independent learners. It is designed to balance acquiring a broad and deep knowledge and to apply these to various digital contexts. It gives space for our children to become thinkers, tackling problems, making mistakes and learning through trial and error. It engages children through creative technologies to prepare them for the demands of the 21<sup>st</sup> century and the technological world that awaits them in the future.

### **Computing Implementation**

Our scheme of work for Computing follows the government's 'Teaching Computing Curriculum' which is supported by the 'Education for Connected World' curriculum. Our online safety objectives are covered by our computing and PSHE curriculum. This scheme provides teachers with flexible and creative teaching materials, as well as rigorous and independent assessment.

The key knowledge and skills that must be taught within each unit have been identified and carefully mapped to support the progression of children's learning across the primary phases, building towards mastery of the end of key stage objectives from the National Curriculum.

The curriculum can be broken down into 3 strands: computer science, information technology and digital literacy, with the aims of the curriculum reflecting this distinction.

The National Curriculum for computing aims to ensure all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation (Computer science)
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems (Computer science)
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems (Information technology)
- are responsible, competent, confident and creative users of information and communication technology (Digital literacy)

Children complete computing units termly, but digital literacy is embedded in all subjects and is used on a daily basis to enhance and support learning of other curriculum areas. As they progress through the school, children build on their prior learning within each strand, covering new or deeper knowledge and developing their technical skills. In digital literacy, our children develop practical skills in the safe use of ICT and the ability to apply these in relevant settings such as the safe use of internet, networks and email. In computer science, we teach children to understand and apply the concepts of computer science such as logic, algorithms and data representation.

*Computer science example, developing and debugging scripts to create an interactive game:*



We teach our children to analyse in computational terms and give practical experience in writing computer programs to solve such problems. Vocabulary is taught in a progressive way to support children in their understanding. Online safety procedures are communicated with all staff and parents.

## Impact

We expect that children at Greenfield should -

- Use digital and technological vocabulary accurately
- See the digital world as part of their world, extending beyond school
- Be confident and respectful digital citizens
- Present as competent and adaptable 'Computational Thinkers' who are able to use identified concepts and approaches in all of their learning
- Be able to identify the source of problems and work with perseverance to 'debug' them
- Create and evaluate their own project work
- Have a secure understanding of the positive applications and specific risks associated with a broad range of digital technology

Children's attainment of these objects can be assessed by the teacher based on the outcomes and the child's self-assessment as part of the KWL grid. This informs focused consolidation where this is necessary. The quality of teaching and learning is also assessed at the end of a unit or term, through book monitoring that particularly focuses on lesson objectives, teacher judgement outcomes and child self-assessment. The aim of this monitoring is to ensure that tasks have been adapted to meet the needs of different learners, and that the pre-identified key knowledge and skills have been taught and acquired/developed.

Example of teacher's guide to assessment task:

Year 4		Using Switched on Computing and Computing Assessment Tasks		RISING STARS
SWITCHED ON Computing	Computing Assessment Tasks	Curriculum content covered within suggested Computing Assessment Task	Content within Computing Assessment Task not covered in Switched on Computing unit (where applicable)	
4.1 – We are software developers	Year 4 Programming	<ul style="list-style-type: none"> <li>• Use sequence, selection and repetition in programs; work with variables.</li> <li>• Work with various forms of input and output.</li> </ul>		
	Year 4 Problem solving	<ul style="list-style-type: none"> <li>• Design, write and debug programs that accomplish specific goals.</li> <li>• Controlling or simulating physical systems.</li> <li>• Solve problems by decomposing them into smaller parts.</li> </ul>	Controlling or simulating physical systems; decomposition.	
	Year 4 Logical thinking	<ul style="list-style-type: none"> <li>• Use logical reasoning to explain how some simple algorithms work.</li> <li>• Use logical reasoning to detect and correct errors in algorithms and programs.</li> <li>• Understand computer networks including the Internet.</li> <li>• Understand how networks can provide multiple services, such as the World Wide Web.</li> </ul>	Understand computer networks including the Internet; understand how networks can provide multiple services, such as the World Wide Web.	

Our Computing curriculum encourages pupils to work creatively and co-operatively in an environment in which children can challenge themselves and think independently. The impact of our curriculum can be seen in displays around school, on the children's accounts and by speaking to the children themselves. Our ambition is for the children at Greenfield to be able to use a computer with confidence.

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