

CURRICULUM SUBJECT OVERVIEW – COMPUTING



‘Program a computer because it teaches you how to think.’ - Steve Jobs

‘Through Faith, Friendship and Fun we Learn and Grow’

Within our Computing curriculum, Faith is expressed through digital stewardship and ethical responsibility, teaching pupils to use technology as a force for good, while Friendship flourishes through collaborative "paired programming" and peer support during complex tasks. The curriculum stays rooted in Fun by using robotics and gamified coding to spark curiosity, ensuring that as students Learn the core mechanics of computational thinking and algorithms, they also Grow in resilience. This growth is most evident when pupils encounter bugs or errors; rather than giving up, they develop the perseverance to debug their work, viewing every challenge as an essential step in their personal and academic development

Spirituality

In Computing, spirituality is expressed through the way we explore the unseen connections between people, ideas, and technology. When children design digital projects, they are encouraged to reflect on the impact of their creations on others, fostering empathy and a sense of responsibility. Whether it's coding a program or creating digital art, we invite students to pause and linger in the creative process, recognizing how it makes them feel. This moment of stillness allows them to appreciate the beauty of logic, patterns, and the ways technology can connect us in meaningful ways.

Intent	Implementation	Impact
At Defford we aim to enable our pupils to be healthy, ecologically aware, global citizens of the future. Technology is changing the lives of everyone. Through teaching computing, we equip our children to participate in a rapidly changing world where work and leisure activities are increasingly transformed by technology. We believe that computing is a fundamental part of our children's education to ensure they are prepared for the digital world in which we live. Through our computing curriculum at Defford we aim to give our pupils the life-skills that will enable them to embrace and utilise new	We encourage children to embrace technology and to have a life-long love of learning. Through a progressive skills-based curriculum, we aim to develop confident, independent learners who are able to plan, design, create, program and evaluate information, through the use of ICT, ensuring that children become digitally literate to be active, safe participants in the digital world. Computing in our reception class ensures that the children enter Year 1 with a strong foundation, builds problem-solving abilities, encourages resilience and supports other areas of learning. By integrating computing into EYFS, the children will begin to build their digital literacy and their understanding of e-safety. This will take place through discrete computing lessons and within our continuous provision, In Years 1 to Year 6 computing is taught in discreet computing lessons. Our scheme of work for Computing is adapted from the 'Teach Computing' Curriculum and covers all aspects of the National Curriculum. This scheme was chosen as it has been created by subject experts and based on the latest pedagogical research. It provides an innovative progression framework	Our primary school computing curriculum has a transformative impact by equipping pupils with the foundational skills to navigate and shape an increasingly digital society. Its influence extends across academic, social, and personal development in the following ways: • Computational Thinking & Problem-Solving: Pupils develop the ability to break complex problems into smaller parts (decomposition), recognize patterns, and create logical step-by-step solutions (algorithms). These skills are highly transferable, aiding performance in other subjects like mathematics and science.

technology in a socially responsible and safe way to flourish. We want our pupils to be able to operate in the 21st century workplace and we want them to know the career opportunities that will be open to them from study computing. We want children to become autonomous, independent users of computing technologies, gaining confidence and enjoyment from their activities. We want the use of technology to support learning across the entire curriculum and to ensure that our computing curriculum is accessible to every child. Not only do we want them to be digitally literate and competent end-users of technology but through our computer science lessons we want them to develop creativity, resilience and problem-solving and critical thinking skills. We want our pupils to have a breadth of experience to develop their understanding of themselves as individuals within their community but also as members of a wider global community and as responsible digital citizens.	where computing content (concepts, knowledge, skills and objectives) has been organised into interconnected networks called learning graphs. The curriculum aims to equip young people with the knowledge, skills and understanding they need to thrive in the digital world of today and the future. It can be broken down into 3 strands: computer science, information technology and digital literacy, with the aims of the curriculum reflecting this distinction. Every lesson in our computing curriculum can be effectively taught using the infrastructure we have in place at school and so that it can meet the needs of all our pupils. Our chosen scheme has been closely referenced against the National Curriculum attainment targets to ensure progression and coverage. Knowledge and skills are mapped across each topic and year group to ensure systematic progression. Having discreet lessons means that the children can develop depth in their knowledge and skills over the duration of each of their computing topics. Where appropriate, meaningful links will be made between the computing curriculum and the wider curriculum. In computing lessons, the children will use either the iPad or laptops to access a range of apps and software. Discreet computing lessons will focus on the curriculum skills of information technology, digital literacy and computer science. Summative assessment for all KS2 units will ensure that skills can be measured and evaluated effectively. A key part of implementing our computing curriculum is to ensure that safety of our pupils is paramount. We take online safety very seriously and we aim to give children the necessary skills to keep themselves safe online. Children have a right to enjoy childhood online, to access safe online spaces and to benefit from all the opportunities that a connected world can bring them, appropriate to their age and stage. We have an embedded 'relevant' and 'progressive' Online Safety Curriculum. Issues such as cyberbullying, online wellbeing, screen time/ addiction, the reliability of information and 'Stranger danger' are discussed in PSHE lessons and assemblies. Children are taught the SMART rules of online safety and are taught the skills and knowledge that they may need to keep themselves safe online. We have access to the resources from National Online Safety and deliver Workshops and Assemblies and share regular updates to teach children and their parents about online safety. We take part in Safer Internet Day each February to raise awareness within school and the local community about the possible dangers of using the internet and mobile technologies, and to advise on ways in which to reduce risk.	• Enhanced Resilience: Through the "debugging" process, students learn that errors are not failures but opportunities for improvement. This fosters a growth mindset, teaching them to persevere and experiment until a program works as intended. • Responsible Digital Citizenship: A strong curriculum ensures pupils are not just tech-savvy but tech-safe. They learn to manage their digital footprint, recognize unethical online behaviours like cyberbullying, and understand how to protect their personal information. • Creative Empowerment: By moving from being passive consumers of technology to active creators, children use digital tools to design games, record media, and animate stories. This builds confidence and allows them to express their ideas in innovative ways. • Future Readiness: Early exposure to computer science principles levels the playing field for students from all backgrounds, helping to bridge the digital divide. It provides a springboard for secondary education and introduces pupils to diverse career paths in technology, from engineering to digital arts.
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Class	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Birch	Technology around us	Digital Painting	Moving a robot	Grouping data	Digital Writing	Programming animations
<i>Reason</i>	<i>Introduces children to the basic concepts of technology and its role in everyday life, fostering early digital literacy.</i>	<i>Encourages creativity and introduces basic digital tools, enhancing fine motor skills and artistic expression.</i>	<i>Introduces basic programming concepts and logical thinking through hands-on activities.</i>	<i>Teaches children how to categorize and organize information, a fundamental skill in computing.</i>	<i>Enhances literacy skills through the use of digital tools, preparing children for future digital communication.</i>	<i>Combines creativity with programming, reinforcing coding skills in a fun and engaging way.</i>
Oak	Connecting computers	Stop Frame Animation	Sequencing sounds	Branching databases	Desktop Publishing	Events and actions in programming
<i>Reason</i>	<i>Introduces the concept of networks and how computers communicate, foundational for understanding the internet.</i>	<i>Encourages creativity and technical skills through animation, integrating art and computing.</i>	<i>Introduces programming through music, making coding accessible and engaging.</i>	<i>Teaches data organization and retrieval, essential skills for managing information.</i>	<i>Enhances literacy and design skills through the use of publishing software, preparing children for future digital communication.</i>	<i>Combines creativity with programming, reinforcing coding skills in a fun and engaging way.</i>
Ash	Systems and searching	Video production	Selection in physical computing	Flat file databases	Introduction to vector graphics	Selection in quizzes
<i>Reason</i>	<i>Introduces complex systems and search algorithms, foundational for understanding advanced computing concepts.</i>	<i>Encourages creativity and technical skills through video creation and editing, integrating art and computing.</i>	<i>Introduces physical computing and selection statements, making coding tangible and engaging.</i>	<i>Teaches data organization and retrieval, essential skills for managing information.</i>	<i>Enhances design skills through the use of vector graphics software, preparing children for future digital communication.</i>	<i>Combines creativity with programming, reinforcing coding skills in a fun and engaging way.</i>

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Birch	IT around us	Digital photography	Robot algorithms	Pictograms	Digital music	Programming quizzes
<i>Reason</i>	<i>Expands on the understanding of technology's role in society, emphasizing and importance.</i>	<i>Encourages creativity and technical skills through the use of digital cameras and editing software.</i>	<i>Deepens understanding of programming by introducing algorithms and problem-solving.</i>	<i>Teaches data representation and interpretation, essential skills for understanding information.</i>	<i>Combines creativity with technology, allowing children to explore music production digitally.</i>	<i>Reinforces programming skills through the creation of interactive quizzes, enhancing logical thinking and creativity.</i>
Oak	The Internet	Audio production	Repetition in shapes	Data logging	Photo editing	Repetition in games
<i>Reason</i>	<i>Expands on the understanding of networks by introducing the internet, emphasizing its importance and functionality.</i>	<i>Encourages creativity and technical skills through the use of audio recording and editing software.</i>	<i>Deepens understanding of programming by introducing loops and repetition, essential concepts in coding.</i>	<i>Teaches data collection and analysis, essential skills for understanding and interpreting information.</i>	<i>Combines creativity with technology, allowing children to explore photo manipulation digitally.</i>	<i>Reinforces programming skills through the creation of games, enhancing logical thinking and creativity.</i>
Ash	Communication and collaboration	Web page creation	Variables in games	Introduction to spreadsheets	3D modelling	Sensing movement
<i>Reason</i>	<i>Expands on the understanding of networks by introducing collaborative tools and communication methods.</i>	<i>Encourages creativity and technical skills through the creation of web pages, integrating design and computing.</i>	<i>Deepens understanding of programming by introducing variables, essential concepts in coding.</i>	<i>Teaches data organization and analysis, essential skills for managing and interpreting information.</i>	<i>Combines creativity with technology, allowing children to explore 3D design digitally.</i>	<i>Introduces physical computing and sensor interaction.</i>

For Willow class, please see EYFS plans. Computing is references in the following areas of learning: Mathematics; Personal, Social and Emotional Development; Physical Development; Expressive Arts and Design; Understanding the World.