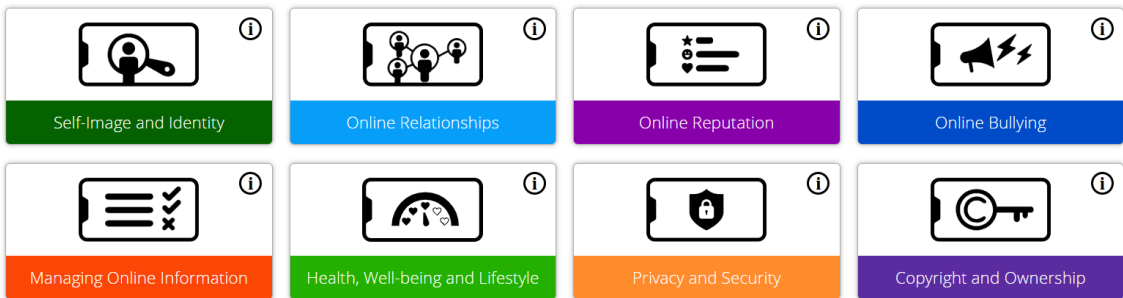




Computing Curriculum

"Coding, it's an endless process of trial and error, of trying to get the right command in the right place, with sometimes just a semicolon making the difference between success and failure. Code breaks and then it falls apart, and it often takes many, many tries until that magical moment when what you're trying to build comes to life." Reshma Saujani, Entrepreneur, founder of Girls Who Code.

INTENT	
 Alignment to National Curriculum	At Abbey Primary School, the computing curriculum meets the requirements of the National Curriculum's Programmes of Study for Key Stages 1 and 2. Computing lessons aim to develop 'thinkers of the future' through a current, ambitious, and relevant education. Within their lessons, pupils are taught to develop their computational thinking and creativity, therefore enabling them to become active participants in an increasingly digital world. It is important that our children understand how to use ever-changing technology to express themselves, as a tool for learning and as a means to drive their generation forward into the future. By building their computing skills from the Foundation Stage, children acquire carefully selected declarative and procedural knowledge across the three pillars of computer science:  Digital Literacy - Ensuring pupils are responsible, competent, confident, and creative users of technology, searching for and selecting information correctly whilst maintaining online safety.  Information Technology - Using information technology to create a range of digital content and understand how computers and devices can be used.  Computer Science - Analyse problems in computational terms and have experience of writing programs and using data, and understand computer networks. Computing teaching links mathematics, science and design technology to provide pupils with opportunities to apply these interwoven disciplines throughout their education and beyond - for enjoyment and for success in the world of work.
 Curriculum End Points	To achieve a broad and balanced curriculum, carefully considered content has been identified to enable progression across the three pillars and domains. Content is sequenced so that pupils build on secure, existing knowledge. Pupils are taught to transfer their knowledge to the different domains of computing to develop a deep, rich understanding. EYFS pupils have the opportunity to: - Identify simple privacy and security linking to online safety and personal information. - Understand simple instructions. - Explore simple programmable toys. Key Stage 1 pupils are taught to: - 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 continue to apply and develop a broader range of skills in different contexts and ways: - 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.

	Therefore, when they enter Key Stage 3 they will be ready to: - design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems. - understand several key algorithms that reflect computational thinking. - use two or more programming languages, at least one of which is textual, to solve a variety of computational problems. - understand simple Boolean logic. - understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems. - understand how instructions are stored and executed within a computer system. - undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices. - create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability. - understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns.
 Sequencing	Within the schemes that underpin the computing curriculum (Teach Computing & Project Evolve), units and content are revisited repeatedly to ensure that key learning is embedded, and that both declarative and procedural knowledge are successfully developed. Each unit follows a sequence of lessons that build on previous learning and enhance the pupils' computational and analytical thinking. Our pupils gain experience and skills in a wide range of technology, through accessible applications, software and programs that enhance and contextualise the learning. Our intention is that Computing also supports pupils' creativity, problem-solving ability, analytical thinking and cross curricular learning to: engage pupils, ensure they make progress and enrich their experiences in school. The online safety of all pupils, including those with SEND and the disadvantaged, is prioritised and informed by 'Education for a Connected World framework - 2020 edition'. As an integral part of each lesson, pupils progressively learn how to stay safe online through the eight domains below:  Our PSHE curriculum and school Values further embed online safety and provide opportunities for pupils to revisit and apply their online safety knowledge in a wider context.
 Computing for All	All pupils, regardless of gender, background, special educational needs, or prior experience access a broad and balanced computing curriculum as a result of well sequenced lessons. <u>Pupils with SEND</u> For pupils with SEND, computing lessons provide opportunities to access learning alongside their peers, enable communication and prepare them purposefully for their future lives and careers. Effective curriculum planning in computing makes specific adaptations based on pupils' identified needs within the four broad areas of need. Lessons are adapted, where necessary, so that pupils' achievement is never limited. Ambitious outcomes for pupils with SEND are enabled as a result of detailed progression in all strands of the computing curriculum, which ensures that the progress made follows the same pathway as their peers.
	<u>Our Computing curriculum develops pupils who:</u> - Are aware of the potential risks and dangers associated with operating online and know how to keep themselves and others safe - Understand that computing involves both logical thinking and creativity - Show resilience when creating content, programming and exploring systems - Are equipped and able to search for, store, analyse, manipulate and retrieve data - Use a range of devices confidently and competently to program, create content, create specific effects and carry out specific actions

