



Severnbanks Primary School Curiosity Curriculum - Computing

National Curriculum Purpose of study

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. 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.

Aims

The national curriculum for computing aims to ensure that all pupils:

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

Characteristics

Through the teaching of Computing pupils will be able to develop the following characteristics:

- Competence in coding for a variety of practical and inventive purposes, including the application of ideas within other subjects.
- The ability to connect with others safely and respectfully, understanding the need to act within the law and with moral and ethical integrity.

- An understanding of the connected nature of devices.
- The ability to communicate ideas well by using applications and devices throughout the curriculum.
- The ability to collect, organise and manipulate data effectively.

Subject Content

Key Stage 1	
Opportunities	<p>To Code This concept involves developing an understanding of instructions, logic and sequences.</p> <p>To Connect This concept involves developing an understanding of how to safely connect with others.</p> <p>To Communicate This concept involves using apps to communicate one's ideas.</p> <p>To Collect This concept involves developing an understanding of databases and their uses.</p>
Pupils should be taught:	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • 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.
Year 1	Computer Skills Word Processing Skills Painting Programming Toys (Beebots) Photo-Story Programming with Scratch Jr Online- Safety E-Safety taught in PSHCE Sessions
Year 2	Word Processing Online Safety Presentation Skills Computer Art Preparing for Turtle Logo Programming Turtle Logo and Scratch E-Safety taught in PSHCE Sessions

Key Stage 2	
Opportunities	<p>To Code This concept involves developing an understanding of instructions, logic and sequences.</p> <p>To Connect This concept involves developing an understanding of how to safely connect with others.</p> <p>To Communicate This concept involves using apps to communicate one's ideas.</p> <p>To Collect This concept involves developing an understanding of databases and their uses.</p>
Pupils should be taught:	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • 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

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<p>Year 3</p>	<p>Presentation Skills Online Safety Drawing and Desktop Publishing Internet Research and Communication Programming Turtle Logo and Scratch Word Processing Online- Safety E-Safety taught in PSHCE Sessions</p>
<p>Year 4</p>	<p>Word Processing Scratch: Questions and Quizzes Programming Turtle Logo Animation Online Safety Photostory / Applying Skills Online- Safety E-Safety taught in PSHCE Sessions</p>
<p>Year 5</p>	<p>Online Safety Flowol - Probots Internet Research and Webpage Design 3d Modelling: SketchUp Radio Station Scratch 3.0 Developing Games Online- Safety E-Safety taught in PSHCE Sessions</p>

Year 6	Spreadsheets Online Safety Film-Making Kodu Programming Scratch: Animated Stories Using and Applying skills Online- Safety E-Safety taught in PSHCE Sessions
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Cultural Capital	STEM Workshops STEM Project GCHQ Visitors Visits to local secondary schools Online communication Videos / Images for website Children and Parents workshops Police - Cyber Bullying
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