



Computing at Ashton Gate Primary School



Computing is learning how to use technology, understanding how computers work, and solving problems using digital tools safely and creatively.

Intent

At Ashton Gate, our Computing curriculum aims to inspire enjoyment and curiosity in using technology, while developing pupils' confidence, resilience, and problem-solving skills when encountering new digital tools. Pupils learn to use technology creatively, collaboratively, and responsibly, understanding its capabilities and the ways it impacts society both inside and outside school. They gain the knowledge and skills to navigate the online world safely, including recognising appropriate behaviour, cyber bullying, and how to respond to online challenges. The curriculum equips pupils with transferable digital skills, preparing them for future learning and life in an increasingly technology-driven world.

Our School Drivers

At Ashton Gate Primary School, Computing supports the development of our school drivers in a variety of meaningful ways.

Cultural Diversity

Computing promotes cultural diversity by helping pupils understand the global nature of technology and how it connects people from different cultures and backgrounds. By exploring how technology is used around the world and learning to communicate and collaborate online safely and respectfully, pupils develop digital citizenship and an appreciation of diverse perspectives.

Independence

Computing fosters independence by encouraging pupils to think critically, solve problems creatively, and take ownership of their digital learning. Through coding, digital design, and online research, pupils learn to make informed decisions, evaluate information, and use technology confidently and responsibly.

Equity

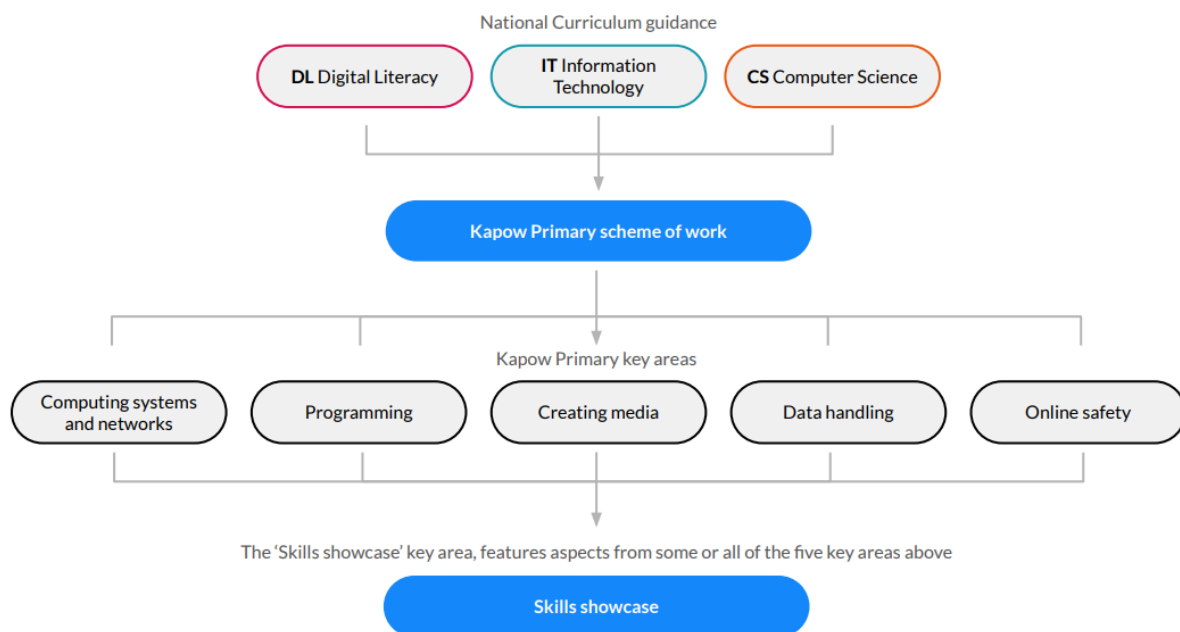
Computing nurtures equity by ensuring that all pupils have access to digital skills and opportunities, regardless of background or experience. It teaches respect and inclusion in digital spaces, challenges stereotypes about technology use and careers and empowers every learner to participate fully in our digital world.

Growth Mindset

Computing supports a growth mindset by encouraging perseverance, curiosity, and resilience when facing challenges. Pupils learn that mistakes are part of the learning process—debugging code, refining designs, and improving outcomes help them develop confidence, creativity and a positive attitude towards learning and problem-solving.

The Kapow Curriculum

Our computing curriculum is taught using Kapow. This is an evidence-led curriculum, which covers the expectations of the National Curriculum, where knowledge is built cumulatively and is retrieved regularly to increase the chance that it will be stored in long term memory. Schemes of learning are regularly updated to reflect new research. Substantive and disciplinary knowledge is mapped out across the topics taught in each year group, ensuring children are building on their skills cumulatively. This spiral curriculum structure enables lessons to be accessible and memorable.



Computing systems and networks	Programming	Creating media	Data handling	Online safety
Identifying hardware and using software, while exploring how computers communicate and connect to one another.	Understanding that a computer operates on algorithms, and learning how to write, adapt and debug code to instruct a computer to perform set tasks.	Learning how to use various devices – record, capture and edit content such as videos, music, pictures and photographs.	Ensuring that information is collected, recorded, stored, presented and analysed in a manner that is useful and can help to solve problems.	Understanding the benefits and risks of being online – how to remain safe, keep personal information secure and recognising when to seek help in difficult situations.

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5
EYFS	Computing systems and networks Using a computer (All 5 lessons)	Programming All about instructions (All 5 lessons)	Computing systems and networks Exploring hardware (4 lessons: 1-4 only)	Data handling Introduction to data (4 lessons: 1-4 only)	N/A
Year 1	Computing systems and networks Improving mouse skills (3 lessons: 1-3 only)	Programming 1 Algorithms unplugged (4 lessons: 1, 2, 4 and 5 only)	Creating media Digital Imagery (3 lessons: 1-3 only)	Programming 2 Option 1: "New" Bee-Bots (4 Lessons: 2-5) Option 2: "New" Digital Bee-Bots (4 Lessons 1,2,4 and 5 only) Option 2: Virtual Bee-bots (4 lessons: 1, 3, 4 and 5 only) Option 3: Bee-Bots (4 lessons: 1, 3, 4 and 5 only)	Online safety Online safety Y1 (All 4 lessons)
Year 2	Computing systems and networks 1 What is a computer? (3 lessons: 1, 2 and 5 only)	Programming 1 Algorithms and debugging (4 lessons: 1, 2, 4 and 5 only)	Data Handling International Space Station (3 lessons: 1, 3 and 5 only)	Programming 2 Introduction to block coding Option 1: MakeCode (4 lessons: 1-4 only) Option 2: ScratchJr (4 lessons: 1, 2, 4 and 5 only)	Online safety Online safety Y2 (All 4 lessons)
Year 3	Computing systems and networks 1 Networks (3 lessons: 1, 3 and 5 only)	Computing systems and networks 3 Journey inside a computer (3 lessons: 1, 2 and 5 only)	Creating media Video trailers Option 1: Using devices other than iPads Option 2: Using iPads (4 lessons: 1-4 only)	Programming Programming Option 1: "New" Scratch (4 lessons: 1, 3, 4 and 5 only) Option 2: Scratch (4 lessons: 1, 2, 3 and 5 only)	Online safety Online safety Y3 (4 lessons: Teach all five by combining lessons 4 and 5)

Implementation

The Kapow computing curriculum has carefully-mapped vocabulary combined with a clear progression of both knowledge and skills. This cumulative curriculum design allows opportunities for children to think hard and apply their learning in different contexts. Computing is taught on a carefully-devised timetable, ensuring spaced retrieval to enhance learning.

Teachers will deliver the curriculum using the CEEAAC model of learning. This allows opportunities to retrieve prior knowledge at regular intervals and ensures pupils have the background knowledge that they need for each lesson. Vocabulary is explicitly taught and concepts are explained clearly using examples. Teachers are able to check for understanding when pupils attempt learning, building in learning loops to ensure that pupils are ready to then apply their knowledge independently.



Connect



Explain



Example



Attempt



Apply



Challenge

To support vocabulary teaching, dual coding of images and words are used. As well as this, knowledge organisers are used in lessons to aid understanding and support retrieval of prior learning. Teachers are able to use Kapow resources to support their subject knowledge and lesson design, tailoring their lessons to be inclusive for their individual classes.

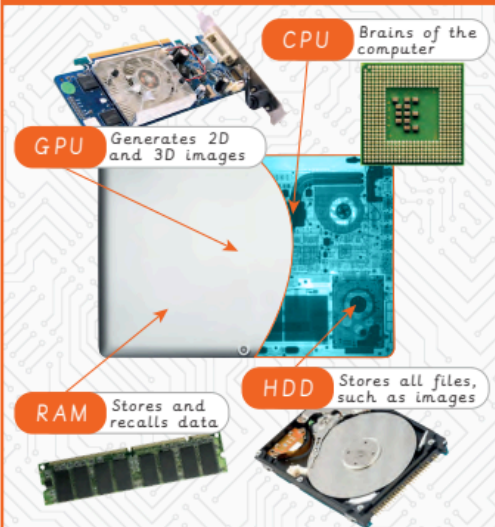
Journey inside a computer

Algorithm	A sequence of instructions when followed, solve a problem.
Computer	Electronic machine that accepts and processes information to produce an output, and then stores the results.
Computer Program	A series of instructions, that are written for a computer to follow, using inputs and outputs to produce an outcome. Also known as software or applications (apps).
CPU	Central Processing Units are the brains of a computer and deal with all the data it receives from input and output devices, as well as programs run within the computer.
Data	Information used for a specific purpose or investigation.
Desktop	A tower computer that needs a mouse, keyboard and monitor, that remains in one place.
GPU	Graphics Processing Unit. It is a piece of hardware that is used to help generate 2D and 3D images for programs such as games.
Hard disk drive HDD	An internal or external device that can store information such as files, documents, images and programs.
Instructions	A series of steps that need to be performed in order.
QR code	Quick Response code. Is presented in a similar way to a bar code and when scanned, can take you to a specific website or provide information.
RAM	Random Access Memory. A piece of hardware that allows data to be recalled or stored within a computer.
ROM	Read Only Memory. Information stored within ROM can only be read and not edited.
Tablet device	A handheld computer, that consists of a touchscreen, operating system and a rechargeable battery.
Trackpad	An input device commonly found built into laptops. It is used to move the cursor with the touch of your finger, and some allow for multiple finger gestures.

Key facts

Kapow Primary

Computer parts inside of a laptop:



Other portable electronic devices:



Subject leaders regularly monitor teaching and learning in computing and collaborate with colleagues across Cathedral Schools Trust to share best practice. Pupils are assessed through retrieval practice, learning loops, and formative strategies such as quizzing, with feedback used to guide teaching. Practical activities make learning engaging, relevant and connected to real-world digital contexts.

Impact

Pupils should leave Ashton Gate confident and capable in beginning to navigate the digital world, able to apply their computing skills in a wide range of contexts. They understand how to stay safe online and use technology responsibly. Children develop a secure grasp of computing vocabulary, such as *algorithm*, and can explain and apply these concepts with confidence. They are able to use familiar software and hardware independently, while also showing resilience and adaptability when encountering new digital tools. Through access to a broad range of online resources, pupils gain cultural capital, promoting equality, diversity, and a greater understanding of the wider world.