Curriculum Statement for Computing

INTENT - What do we aspire for our children?

'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.'

National Curriculum 2014

What is our Rationale for Computing?:

At Hotwells we follow the [National Curriculum for Computing](#) and, alongside this, we aim to ensure that all learners:

- Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation.
- Begin to analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems.
- Evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems; and are competent, confident and creative users of information and communication technology.
- Are responsible users of technology and recognise the risks associated with an online presence.
- Become critical consumers of online information.

What are our aims for Computing at Hotwells?:

We aim to equip our pupils at Hotwells with the skills and knowledge to be technologically prepared citizens for the next stage of their education and beyond. We want our children to embrace the creative side of

Computing as one of our overarching aims as a school and encourage them to show originality in their Computing sessions. We want them to challenge themselves and feel confident to use new skills, techniques and have fun with technology. Computing is valued throughout the school and we welcome the children's use of Computing to show their individuality and learning successes. We also welcome visiting parents and outside individuals with expertise in the area of STEM/Computing in order to provide our children with new opportunities. This encourages community links to Computing professionals/companies in the local area. Computing is taught using the Kapow Primary scheme of work, which allows us to cover a breadth of areas and give our pupils all of the necessary skills.

At Hotwells, our overarching aims are:

We are Ambitious:

- Pupils are proud of their learning in Computing.
- They are able to articulate their successes and learning journey.
- Pupils showcase their ideas and creativity using a range of digital media.

We are Creative:

- Pupils use age-appropriate digital tools and platforms to create their own unique content.
- Pupils can draw on cross-curricular links to use their learning in Computing to enrich outcomes across other subjects.

We are Local and Global Citizens:

- Pupils build and participate in a safe and responsible online community.
- They use technology responsibly.
- They understand the importance that Computing will have in their social and personal futures, education and working life.
- Through Computing, our pupils become critical thinkers who are able to understand how to make informed digital choices in the future.

What will our children learn at Hotwells?

The Kapow Primary scheme is organised into five key areas, creating a cyclical route through which pupils can develop their Computing knowledge and skills, by revisiting and building on previous learning:

- Computer Systems and networks.
- Programming.

- Creating media.
- Data handling.
- Online safety.

Kapow Long Term Computing Sequence:

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6	Online Safety
EYFS	Continuous Provision in class	Computing Systems and Networks	Programming (Unit 1)	Computing Systems and Networks	Programming (Unit 2)	Data Handling	
Year 1	Computing Systems and Networks	Programming (Unit 1)	Skills Showcase: Rocket to the Moon	Programming (Unit 2)	Creating Media	Data Handling	Online Safety Year 1
Year 2	Computing Systems and Networks 1	Programming (Unit 1)	Computing Systems and Networks (Unit 2)	Programming (Unit 2)	Creating Media	Data Handling	Online Safety Year 2
Year 3	Computing Systems and Networks (Unit 1)	Programming	Computing Systems and Networks (Unit 2)	Computing Systems and Networks (Unit 3)	Creating Media	Data Handling	Online Safety Year 3
Year 4	Computing Systems and Networks	Programming (Unit 1)	Creating Media	Skills Showcase: HTML	Programming (Unit 2)	Data Handling	Online Safety Year 4
Year 5	Computing Systems and Networks	Programming (Unit 1)	Data Handling	Programming (Unit 2)	Creating Media	Skills Showcase: Mars Rover 2	Online Safety Year 5
Year 6	Computing Systems and Networks	Programming	Data Handling (Unit 1)	Creating Media	Data Handling (Unit 2)	Skills Showcase: Inventing a Product	Online Safety Year 6

Kapow Computing has been deliberately chosen as our scheme of work for the following reasons:

- It has been authored by primary Computing specialists using free readily-available software which enables those with a keen Computing interest to further practise their skills at home.
- It includes in-built CPD for teachers: they are able to learn as they plan.

- A full scheme of work, easily adaptable to individual teaching needs, is provided.
- There is a clear progression of both substantive and disciplinary knowledge through EYFS, Key Stage 1 and Key Stage 2.

In addition to the core knowledge required to be successful within each key area, the curriculum outlines key areas of disciplinary knowledge that the children will learn. These are Computer Science, Information Technology and Digital Literacy. Each module will focus on developing pupils' disciplinary knowledge in one of these key areas. The mapped progression for this can be found here.

IMPLEMENTATION - How will we deliver the curriculum?

Computing is taught weekly in each year group using the Kapow Primary Computing scheme. This enables pupils to study the knowledge, understanding and vocabulary required to succeed. Each module aims to activate and build on prior learning, including EYFS, to ensure better cognition and retention. Each module is carefully sequenced to allow for prior learning to be built upon and skills to be practiced and advanced.

What will Computing look like in EYFS?

The Kapow Computing Scheme provides EYFS guidance and resources. Technology in the Early Years can include:

- Taking a photograph with a camera or tablet.
- Searching for information on the internet.
- Playing games on the interactive whiteboard.
- Exploring an old typewriter or other mechanical toys.
- Using a Beebot.
- Watching a video clip.
- Listening to music.

Allowing children the opportunity to explore technology in this carefree and often child-led way, means that not only will they develop a familiarity with equipment and vocabulary but they will have a strong start in Key Stage 1 Computing and all that it demands. More information on the importance of introducing Computing in the EYFS can be found here.

What will Computing look like in Key Stage 1 and Key Stage 2?

Our Computing curriculum is taught across each year in modules (Key Stage 1) or units of work (Key Stage 2) that enable pupils to study in depth key skills and vocabulary and demonstrate their understanding. Each module builds upon prior learning and these are strategically planned throughout the academic year with opportunities to introduce and revisit key concepts and skills in order to deepen pupil understanding and embed learning.

Each Computing lesson should include:

- Explicit teaching of and recapping of vocabulary.
- A recap on prior knowledge.
- Knowledge organisers used to support key knowledge and vocabulary.
- Focussed practical task with modelling.
- Opportunities for discussion and purposeful talk.

Children use Knowledge Organisers at the start of a unit to introduce a topic and the key vocabulary. Some examples of Knowledge organisers from Key Stages 1 and 2 can be found here.

How will we support our learners with SEND in Computing?:

First and foremost, we support our pupils with SEND through **Universal Quality First Teaching**. High quality teaching is the first step in responding to pupils who have special educational needs (SEND Code of Practice, 2015: 6.36-6.37). We aim to ensure that *all* pupils access a broad and balanced curriculum and that this curriculum is not narrowed in any way for our pupils with SEND:

Some pupils will need support that is **additional to** high quality teaching. For this, we focus our support using the strategies from the Education Endowment Fund SEND guidance (EEF, 2021). This is included in the following table:

Explicit Instruction	Cognitive and Metacognitive Strategies	Scaffolding	Flexible Grouping	Using Technology
Provide clear instructions in small manageable steps	Children will use retrieval practice to connect to the prior learning.	Scaffolding will be temporary support that is removed when no longer required.	Groups are allocated temporarily and are not predetermined.	Technology can assist in the teacher modelling through

Allow children to spend longer on the 'attempt' part of the lesson. Use a range of visual aids to support with their understanding including teacher demonstration videos and exemplars of work. Teachers will give guided practice to those children who need it to support with remodelling, re-explaining and re-phrasing.	Core content from the lesson sequences will be chosen. Core vocabulary will be carefully considered and used. Children may be given a small task at a time so as not to overload their working memory. Worked examples will be provided to support with their independent learning. Pre-teaching can be used as a technique.	Scaffolding can be verbal, visual or written. Differentiated tasks may be provided which are accessible for the child. Careful consideration and adaptation of the tools and resources used	Pre-teaching can be used as a technique here to support	demonstrating worked examples Quizzes, apps and websites support the learning

Furthermore, a very small number of pupils will require **Specialist** provision whereby they will have a high level of support, and carefully considered targets, in order for them to be able to access the curriculum alongside their peers.

How will we use Assessment?

Formative Assessment:

Pupils will be assessed formatively as each lesson progresses. Pupils will be given tasks, the teachers will collect evidence, from which they will draw conclusions and then adaptations will be made as a result of that evidence.   Strategies that might be used are:

- Making explicit the learning intention and success criteria
- Eliciting evidence of pupils' prior knowledge
- Feeding back at the point of learning
- Inclusive Questioning i.e. cold call, mini whiteboards
- Retrieval practice i.e. cumulative quizzing

Summative Assessment:

The curriculum is a progression model; we will know whether students are making progress if they are learning more of the curriculum. The Kapow curriculum is designed to ensure sequencing of core knowledge, vocabulary and disciplinary knowledge. They will know more, and remember more with the taught curriculum content. Essentially they will be able to do more with this knowledge in carefully designed learning tasks.

This will be assessed using the Book Study approach; talking with pupils systematically to reveal:

- Content and knowledge
- Vocabulary
- How the pedagogy and taught curriculum helps/hinders their learning.

IMPACT - How do we know our curriculum is effective?

Pupil Voice:

We understand that pupils are the best way to show how effective our curriculum is. Pupil voice will demonstrate:

- Children talking about the 'why' behind their learning and building upon previous knowledge and skills.
- That children can confidently talk about how to use technology safely, responsibly and how to recognise the signs of unsafe situations and how to respond to them.
- An increased use of subject specific vocabulary.