



## Computing Purpose & Rationale

### *Flourishing Together*

At Quinton Church Primary School, we believe that to **Flourish** is to become the best version of ourselves in body, mind and spirit (John 10:10). It means being loved and recognised for who we are, uniquely made in the image of God (Psalm 139:13-14).

**Together** emphasises the strength, possibilities and encouragement that can be found in community, teamwork and family (Psalm 133:1). It highlights how everyone has a part to play and brings value and worth to our collective endeavours. Togetherness shines a light on our desire to be a community that is inclusive of everyone, whatever the challenges, so that all can flourish (1 John 4:19).

At Quinton, our culture is to: **Be kind, be fair and be thankful** (Micah 6:8). This overarching culture of kindness, fairness and thankfulness are further explored through our six values of **Belonging, Love, Justice, Forgiveness, Peace and Hope**.

Our curriculum is driven by our Christian Vision, Culture and values, and the diversity of our local, national and global community.

## Curriculum Purpose: Why study Computing?

### **Why do we teach Computing? (intent)**

Many aspects of the modern world are run by technology. We see it in every aspect of our lives: from supermarket self-scanners to QR codes and social media. The internet is constantly at our fingertips. Many of the pupils from our school family are digital connoisseurs as they have constant access to technology and the Internet. It is likely that many of our children's future careers are going to be heavily influenced and involved in technology. With the many risks posed with the ever-changing developments within online communication, we need to ensure that our pupils keep themselves safe as they use social media and collaborative gaming. By studying computational thinking through programming, pupils learn how to recognise problems and approach them in a controlled and systematic way.

### **National Curriculum (what do we want learners to be able to know and do by the time they leave Quinton Church Primary School?).**

As our children leave Quinton Church Primary School, we want to be confident that children are computer and technologically literate.

We want our children to be able to:

- problem solve and write their own programs through writing and debugging algorithms.
- use the internet safely and securely both as a tool for communication and research.
- use a variety of computer programs to publish their ideas to illustrate their understanding.
- to create, edit and publish music and film using a variety of computing multimedia.
- know that data can be presented in different ways and manipulated within an evaluation.
- know the many risks involved in use of the internet.
- be digital ambassadors – not only knowing how to keep themselves safe online, but also others within their community.

### **Which Christian values underpin the curriculum content?**

At Quinton, our culture is to: **Be kind, be fair and be thankful** (Micah 6:8).

This overarching culture of kindness, fairness and thankfulness are further explored through our six values of: **Belonging, Love, Justice, Forgiveness, Peace and Hope.**

We endeavour to teach these values within the teaching of the computing curriculum ensuring they are incorporated within our **social, moral, spiritual and cultural** development.

### **How are British Values taught through Computing?**

At Quinton Church Primary School, pupils are taught about British Values through Computing by learning about a variety of diverse communities. Within Computing, we promote tolerance through different people's ideas that may be built on cultural diversity which promotes mutual respect. We link this to pupils' behaviour online and how mutual respect and tolerance is applicable to the online world as well as in society. Pupils have the opportunity to work independently and as a team to build resilience and self-esteem through tasks. In particular the idea of working in teams is vital in coding and debugging tasks. When working in groups pupils are expected to share ideas and resources and encourage and support each other. By promoting high expectations through the setting of ground rules, pupils are rewarded for positive behaviour.

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## Curriculum Rationale: Why study Computing in this way?

### Why has the specific knowledge been selected?

Our computing curriculum is divided into the following threads, each of which play a vital part within gaining a good knowledge and understanding of Computing:

<b>Computing Systems And Networks</b>	<b>Programming</b>	<b>Creating Media</b>	<b>Data Handling</b>	<b>Online Safety</b>
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.

Each of these components contribute the children's computational thinking and gives them an understanding of not just the influence computing has on us, but also the influence we can have on computing.

### Why is it taught in the order that it is?

The knowledge and understanding of the complexity and capabilities of computing spirals incrementally as the child progresses through our school. The expectation in the production of data and information becomes more complex through KS1 and KS2. E-Safety is age appropriate and represents the levels of exposure to online communication at each key stage.

### How are Computing lessons delivered at Quinton?

At Quinton, we use the Kapow scheme of work for computing which helps deliver a progressive, cyclical curriculum for the teaching of computing. Lessons follow the schemes of work and are taught in regular half-termly blocks.

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### **What is the impact?**

After the implementation of this computing curriculum, children at our school will be digitally literate and able to join the rest of the world on its digital platform. They will be equipped, not only with the skills and knowledge to use technology effectively and for their own benefit, but more importantly – safely. The biggest impact we want on our children is that they understand the consequences of using the Internet and that they are also aware of how to keep themselves safe online.

As children become more confident in their abilities in Computing, they will become more independent and key life skills such as problem-solving, logical thinking and self-evaluation become second nature.

### **Computing Curriculum Aims (end-points)**

#### **What are the aims, end-points, of specific stages of the curriculum?**

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.

The computing skills within the Kapow Scheme equips pupils to use computational thinking and creativity to understand the principles of information and computation, how digital systems work and programming. Knowledge and understanding are built upon year on year across each of the strands of information technology and programming from the computing curriculum. Pupils across key stages 1 and 2 are equipped to use information technology to create programs, systems and a range of content. They are able to use and express themselves and develop their ideas through information and communication technology to solve problems.

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**By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.**

### **Early Learning Goal:**

Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.

### **Key stage 1**

#### **Pupils should be taught to:**

- understand what algorithms are; how they are implemented as programs on digital devices; and those 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 should be taught to:**

- 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.

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