# Computing

**Intent**

Computers are now a key part of children's everyday lives at both home and school. It is our intent that children will leave St Katharine's not just confident using a range of devices and applications but also with an understanding of how they work. As children's lives increasingly move online, we want the children to know how to keep themselves safe and how to make the most of the digital tools at their fingertips. We want to kindle in the children a knowledge and enjoyment of computer science and STEM learning which they can take forward into their future learning.

**Curriculum**

There are four distinct strands to our computing curriculum. Each strand has its own clear skills progression. The strands are taught through a mixture of discrete, subject specific computing lessons and as part of other blocks of learning. The four strands are:

- coding and programming
- understanding networks (KS2 only)
- creative computing
- online safety

The whole curriculum has been designed with input from secondary colleagues to ensure a smooth transition through KS1 and KS2 and on into KS3.

Coding and Programming
This strand, which incorporates computational thinking, is mainly taught as discrete computing sessions, although some curriculum links will exist where appropriate. Children begin in EYFS with exploring technology in everyday life through their play and using programable toys such as Beebots. In KS1 children use Beebots with a specific goal to complete tasks, they begin plan their code and debug where necessary. Children also begin to use on screen coding applications, such as the use of Scratch Jr and other apps.

In KS2 children begin to use Scratch as a block programming tool. They learn to use repeats, selection, variables and mathematical operators to achieve a specific task. Their computational thinking is also developed as they plan their code using flow charts. By the end of KS2 children are confident and competent using block programming tools with a solid understanding of the principles that make their code up. They have a chance in upper KS2 to apply this to physical devices using Lego Mindstorms robots and BBC Microbits – using different visual block programming languages, but the same principles. Transition is planned so that in KS3 children will briefly consolidate this use of block programming before learning to apply the same principles to code in languages such as Python.

Understanding Networks
This strand, taught at KS2, is about introducing children to some of the concepts behind the technology they use. These are taught in a few dedicated, discrete lessons throughout the year, although teachers will be able to regularly reinforce concepts through the children's everyday use of the internet and technology. Learning includes how the internet works, how computers work together in the school network, how search engines work and what is inside a computer.

# Computing

Creative Computing

This strand is usually taught as part of other areas of the curriculum, although it may start with a 'tinkering' session to familiarise children with an app, process or specific tool. The wider curriculum provides the focus and task aspect (for example make a podcast, digital publication or animation to showcase your learning about Ancient Greeks).

Through KS1 and KS2 children will learn word processing, desktop publication, presentation, digital publishing, animation, audio content creation and video creation tools and skills. They will also learn to combine these, for example adding their own video or animation to an ebook.

Throughout the school children are encouraged to make choices about layout, format and content to suit audience and purpose. By upper KS2, children are also encouraged to make choices about which apps and tools they want to use and combine. These choices are again based on the purpose and audience for their content.

Online Safety

We teach online Safety using the resources and lessons on [www.projectevolve.co.uk](www.projectevolve.co.uk) These take the 350 statements from the UKCIS (UK Council for Internet Safety) framework "Education for a Connected World" and provide resources for each. These cover 8 strands of online safety:

- Self-Image and Identity
- Online Relationships
- Online Reputation
- Online Bullying
- Managing Online Information
- Health, Well-being and Lifestyle
- Privacy and Security
- Copyright and Ownership

Each class has a half term where their computing focus is Online Safety and teachers will deliver sessions from this framework. In addition to this, online safety is an all year, ongoing focus, which is constantly returned to – teachers will use Project Evolve resources to support their online safety teaching and messages throughout the year. There is also overlap into PSHE learning here.

**Impact**

At the end of a block of learning on a specific strand, teachers identify children who did not achieve the skills and knowledge set out in the curriculum. They also identify children who demonstrated they were working beyond the age-related expectations of the curriculum. This is recorded …