

## Computing at St Michael's School

At St Michael's, we want children to love Computing.

### Intent

The curriculum has been designed so that children understand the relevance of Computing and are able to make connections with the real world.

It aims to make children digitally literate and competent users of different technology and software at a level suitable for the future workplace. From the very beginning of their learning journey, children are introduced to the core of the curriculum, 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. Children learn that to be able to write code is to use the same principles of problem solving – abstraction, logic, algorithms and data – that are found in Mathematics, Science, D&T and other curriculum areas. Through the teaching of online safety, the Computing curriculum ensures that children can understand how to connect with others within the law and with moral and ethical integrity.

The children are not only equipped with the minimum statutory requirements of the National Curriculum, they are also taught to become capable members of the digital community in an age in which technology increasingly dominates everyday life. Wherever we can, links are made with “real-life” professions and contexts which rely on ICT to make Computing real, relevant and purposeful.

We achieve this by providing a rich, diverse curriculum, underpinned by our school's core values of Respect, Honesty and Love, enabling every member of the school community to have a 'Lifetime Love for Learning'.

### Implementation

The St Michael's Computing curriculum is organised into key concepts: *coding and programming, creative computing and data* and *online safety with understanding networks* introduced to the curriculum in Key Stage 2. Throughout their time at St Michael's, children revisit these concepts to build on prior knowledge and skills, ensuring that they have the chance to make links and develop their understanding. We believe it is these concepts that help children and teachers to understand what being a computing engineer, web developer or games tester is all about.

As the children move through the school, they revisit the skills of computer scientists, engineers and web developers to commit key knowledge and understanding to their long-term memory. They also learn to become computational thinkers. By learning and using the concepts and approaches of computational thinkers, children become problem solvers, working out the steps needed to solve problems and the skills required to solve them with or without technology. By equipping children with the skills to solve problems with growing independence, we hope that children foster a lifetime love for learning.

In Early Years, children begin their learning journey by watching adults model and use a diverse range of technology in class. The foundations of future learning are created through the EYFS Curriculum where they learn, for example, about the different factors that support their overall health and wellbeing:- sensible amounts of 'screen time'. From Year 1 onwards, huge importance is placed on online safety so that the children might

become discerning, responsible and safe users of technology at home and school. Online Safety is taught using the ProjectEVOLVE resources, assessment and tracking tools. From the importance of passwords, to copyright and communication with others online (both friends and strangers), children are equipped with vital skills that will protect themselves and others in ever-changing and sometimes daunting online world. When they leave St Michael's for their continued learning journey in secondary school, we aim to have taught children that, having been equipped with the awesome power of technology and its potential for learning, play and work, they have an enormous responsibility to keep themselves and others safe.

In Key Stage One, technology is used on a daily basis, from word building in phonics using the interactive whiteboard, to daily iPad use across the curriculum. While using iPads, laptops, BeeBots and other hardware – as well as software such as Scratch or PowerPoint – the children will apply the approaches of the computational thinker to writing algorithms (coding, taught using the Barefoot Scheme of Work), communication and online safety. They have opportunities to tinker with new software, create games and animations for a wide variety of purposes and understand networks such as the internet. While nurturing the skills of future pioneers in computer science and information technology, we understand that it is important that children get to grips with as many different technologies as possible, recognising how to use them purposefully, safely and responsibly.

Teachers are provided with a Curriculum Map and Knowledge Webs to ensure all children are progressing through their Computing learning skills and that they are taught the appropriate skills at the right time in their Computing learning journey. The Knowledge Webs identify what knowledge and skills to assess and how to do this.

### **Impact**

St Michael's School takes great pride in the teaching and learning of Computing and strives to ensure that every child can become a confident user of technology, being able to use it to accomplish a wide variety of goals, both at home and in school. Children will have a secure knowledge of the implications of technology and digital systems by the time they leave our school. This is important in a society where technologies and trends are rapidly evolving. Our pupils 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.