Computing

Intent

At Christ Church, the core of computing is Computer Science in which pupils are introduced to a wide range of technology, including laptops, iPads and interactive whiteboards, allowing them to continually practice and improve the skills they learn. We believe that Computing is an essential part of the curriculum; a subject that not only stands alone but is woven and should be an integral part of all learning. This ensures they become digitally literate so that they are able to express themselves and develop their ideas through information and computer technology– at a level suitable for the future workplace and as active participants in a digital world. The skills learnt through the online platform Purple Mash are transferable with real life situations, for example spreadsheets, databases, data handling and online security. Staff are regularly offered CPD within Computing and Purple Mash to improve confidence within teaching and keep abreast of an ever, evolving subject.

Through the study of Computing, children will be able to develop a wide range of fundamental skills, knowledge and understanding that will actually equip them for the rest of their life whilst remembering appropriate conduct online and reporting protocols. Computers and technology are such a part of everyday life that our children would be at a disadvantage would they not be exposed to a thorough and robust Computing curriculum. Children must be taught in the art form of 'Computational Thinking' in order to provide them essential knowledge that will enable them to participate effectively and safely in the digital world beyond our gates. Enjoyment, safety and independence is at the forefront of our intentions when children are becoming computer literate. Pupils are provided with a Computing Knowledge Organiser which is also shared with parents at the beginning of each term to specify the knowledge, skills and vocabulary to be acquired and an overview of content.

Parents are included in home school links projects to promote E safety and be sent reliable, current information and tips on how to keep children safe at home in the digital age. The Home School link Project also give children the advantage of presenting their ideas digitally. In addition to projects and knowledge organisers, safety leaflets and information is regularly shared with students and parents via our website and the school app. Any online safety issues of note and interest are immediately followed up with school correspondence.

Implementation

In the Early Years the approach is through cross-curricular learning with an emphasis on hands on experiences and is assessed through the Understanding the World, Early Learning Goal. Teaching is through context-based and role play experiences using many resources such as programmable toys. For Key Stage 1 and 2, computing is taught in order of units as they present on Purple Mash with the exception of Internet Safety and Coding. In Key Stage 1 the children learn to understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. They are taught to create and debug simple programs and use logical reasoning to predict the behaviour of simple programs. They are shown how to use a range of technology purposefully to create, organise, store,

manipulate and retrieve digital content as well as recognise common uses of information technology beyond school. They are taught to 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. Also included are essential skills within Spreadsheets, Effective searching, pictograms and animation. Each of these skills will be taught through exciting half termly units. Where applicable, the children move away from Purple Mash to apply their skills in 'real life' situations for example programming bots, presenting information digitally and online research across the curriculum.

In Key Stage 2 the children design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. They use sequence, selection, and repetition in programs, use logical reasoning to explain how some simple algorithms work and correct errors in algorithms and programs. Children are taught to understand computer networks, including the internet, and the opportunities they offer for communication and collaboration. They use search technologies effectively, learn to appreciate how results are selected and ranked, and be discerning in evaluating digital content. Children are taught to select, use and combine a variety of software (including internet services) on a range of digital devices to create a range of programs, systems and content that accomplish given goals. This includes spreadsheets, databases and email. Once children have grasped this through Purple Mash, they are encouraged to transfer their skills in real life situations, for example, use Excel spreadsheets including formulaic conversions. They use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Our regular pupil voice gives pupils the opportunity to work with our Computing Subject Leader to continually develop our Curriculum. Even our children in Early Years provision are exposed to the understanding of internet safety as they explore the world around them and how technology is an everyday part of their learning and understanding of the world.

Discreet lessons are accessed on school laptops or iPads, though each year group will ensure adequate times and learning on laptops to develop these skills. Immediate feedback is given to children who complete work within the platform of Purple Mash and children have the opportunity to independently revisit work and improve the outcomes. Children have opportunities to explore computing beyond the classroom with online learning available via Purple Mash at home. Outside agencies including future visits from the Barclays coding team and High School link visits give the children a wider range of skills to acquire.

The order of topics is set to ensure children can access the skills in order of usefulness, difficulty and meaningful progression – for example, Game Creator topic comes before Coding to show the outcomes of programming and algorithms. All year groups (with the exception of Year 1) start with spreadsheets to ensure evident progression and to ease the children into the formulated lessons. Children are taught Internet Safety in collaboration with Internet Safety Day in Spring Term 1 to promotes its importance both with children and parents. Every year, Internet Safety Day looks different at Christ Church as we engage both children and parents alike with the current topics and issues. Christ Church takes internet safety extremely seriously. We have an E- Safety Policy that provides guidance for teachers and children about how to use the internet safely. Every year group participates in lessons on e-safety and children understand how to stay safe when using technology. Coding is taught last in each Year groups to enable children to retain this knowledge more, to ensure enough time is given to the longer unit and to enable teachers the opportunity to block this topic.

The Intent, implementation and Impact of our Curriculum – S.T.E.M

Impact

After the implementation of this robust computing curriculum, children at Christ Church are digitally literate and able to join the rest of the world on its digital platform. They are 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. Kindness and our Christian values would be clear to see with the children's' awareness of online Safety and our responsibility to each other's well-being on social platforms.

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.

If you were to walk into Computing lessons at Christ Church, you would see:

- ✓ Proficient users of technology who are able to work both independently and collaboratively.
- ✓ A technological vocabulary and word bank with an understanding of most of the language associated with computing.
- ✓ Computing hardware and software being utilised to enhance the learning outcomes of our children, across the curriculum.
- ✓ Clear progression in technical skills.
- ✓ A learning buzz as children engage in programming, prepare online safety presentations and feedback effectively to peers.