Computing at Chesterfield

In an ever-advancing world of technological innovation it is paramount that our high-quality computing curriculum equips pupils to use computational thinking and creativity to understand and change the world in which they live. Inline with our curriculum driver, developing aspirations and possibilities for all, we believe that computing underpins a successful future for our children. Providing children with a personal device enables them to use digital technology in a variety of ways across the curriculum, ensuring that they leave Chesterfield School digitally literate and as active, responsible participants in a digital world. We want children to have no limits to what their ambitions are and grow up wanting to be computer programmers, engineers and technicians.

Our curriculum drivers of communication, oracy, reading, aspirations and inclusion for all shape every aspect of computing, are embedded in teaching and learning and develop the child as a whole.

What do we want our children to learn?

By the end of their primary education our children will:

- Use technology safely, respectfully and responsibly, by recognising acceptable and unacceptable behaviour, and identifying a range of ways to report concerns about content and contact.
- Use technology purposefully to create, collect, organise, store, analyse, manipulate and present digital content by combining a variety of software on a range of digital devices.
- Understand how to use computers and networks to communicate and collaborate, while analysing the reliability of sources when using search technologies.
- Have a competence in coding for a variety of practical and inventive purposes, including the application of ideas within other subjects.

Computing in the EYFS:

In the Early Years:

- Technology is integrated into continuous provision so children can experience first-hand how to use and control technology through play.
- Additional experiences might also include: 'off-screen' activities like 'programming' a friend using simple instructions to tell them how to move around like a robot or make jam sandwiches in maths. Use of control toys like remote control cars, BeeBots or apps on iPads.
- Key computing concepts and online safety messages are taught through stories and also conveyed through guided use, continuous provision and adult modelling in the school or setting.

How do we implement our computing curriculum:

- We use the Kapow scheme of work to support teachers with their planning and delivery of the computing curriculum.
- Pupils use chrome books and other hardware such as beebots to access the computing curriculum.
- Lessons build on what the pupils already know and the subject knowledge that is imparted becomes increasingly specific and in depth, with more complex skills being taught.
- Some aspects of digital literacy, with a focus on e-safety, are also covered in PSHE lessons as well as whole school assemblies.
- As well as stand-alone computing lessons, children are constantly accessing computing equipment during the day, including reading books online, completing cross-curricular tasks and presenting their work in a digital form.
- Teachers deliver a different unit of work across a 9/10 week period and coverage of all three strands of the computing curriculum is ensured.
- Wow days and interactive workshops themed around key areas of the computing curriculum such as online safety, coding and programmers' day are planned for throughout the year to develop skills and inspire children to have a life long love of learning in computer science.
- Key computing concepts are taught through stories such as the 'Hello Ruby' collection as part of year group Core Texts.

Planning:

- The computing curriculum map identifies the units to be covered every 9/10 weeks, with links to the National Curriculum, inspirational figures and reading books.
- Consideration is given to how greater depth will be challenged within each lesson, as well as how learners will be supported in line with the school's commitment to inclusion. Differentiation and challenge is evident and planned for in every lesson.
- Computing pedagogy such as 'tinkering', 'off-screen' activities and PRIMM (predict, run, investigate, modify and make) are evident and planned for in lessons.
- Teachers plan for opportunities to increase children's knowledge of inspirational professionals in the field of computer science.
- Teachers plan for opportunities to develop children's oracy skills by identifying key vocabulary linked to the area of computing.
- Consideration is given to the aim and outcomes of each lesson through clear learning objectives and success criteria.

Teaching:

- Each year group has an overview of 3/4 topics taught over a period of 9/10 weeks. Each of these topics has 5 lessons, spanning 50 minutes. A single lesson is taught over 2 weeks.
- Every year group teaches their e-safety unit on 'Safer Internet Day'.
- Relevant vocabulary is explicitly taught, is evident in the classroom and is used in discussion and reasoning.
- Each lesson is based around delivering one or more of the national curriculum objectives and includes an 'Attention Grabber', then the 'Main Event' before 'Wrapping Up'.
- The Attention Grabber: Offers context for the lesson in an engaging manner to capture the interest of pupils and develop enthusiasm for the subject.
- The Main Event: The main part of the lesson is where the children are exposed to new learning, linked to the national curriculum objectives.

- Knowledge webs are referred to throughout the planning and teaching cycle of a unit to ensure key concepts are taught.

Assessment and feedback:

Assessment for learning is continuous throughout the planning, teaching and learning cycle. Assessment is supported by use of the following strategies:

- Verbal feedback/questioning/modelling/demonstrations at the time of the activity or during small focus groups are the main form of feedback used.
- Effective questioning is provided on each lesson plan.
- Plans outline clear assessment opportunities to help teachers make accurate, formative assessment throughout the lesson.
- Plans provide teachers with 'next step' activities to help challenge children further.
- Computing skills tracker to be completed for the class after each unit of work.
- At the end of the academic year, the class teacher will identify those children who are working towards, at and above expectations. This will be passed onto the next teacher.
- Children are to complete unit quizzes at the end of a unit to help teachers and children track progress.
- Teachers incorporate clear success criteria as part of their plenaries to allow for children to reflect on their learning at the end of each lesson.

E-book:

- Teacher will assign the e-book at the start of a unit. Every new unit needs to have the unit title recorded and knowledge web uploaded alongside the L.O for 1 skills lesson (identified by the CT) and final outcome.
- The e-book should be assigned on Seesaw for monitoring and assessment purposes.
- At the end of a unit, the children will complete a quiz for progress and assessment purposes.
- An e-safety e-book will be evidenced during 'Safer Internet Day'.
- At the end of a chosen skills lesson, children are expected to capture a photo, video or screenshot of specific skill taught and upload this to their e-book as evidence of their work. A minimum of 2 lessons should be evidenced in this way, one of them being their final piece.
- 'Off-screen' tasks can be captured through photo or video and uploaded to the e-book.
- Children should be given the opportunity to reflect on their learning once at an appropriate time within a unit of work. This should include technical vocabulary to show children's understanding of the skills they have learnt so far. This can be typed or voice recorded (KS1/SEN). This will usually accompany the skills lesson chosen by the CT.

- Wrapping Up: An opportunity for children to consolidate, summarise or evaluate their learning.
- Throughout the lesson, children should be actively engaged in their learning – typically this will be doing something on a computer, but it could also be taking part in a discussion or an 'off-screen' activity, such as role-play to illustrate how pockets of data travel across the internet.
- Children are given the opportunity to 'tinker' with hardware and software. They are able to predict, run, investigate, modify and make programs or content (PRIMM).
- Where possible, teachers construct activities so that pupils can work together, supporting one another in their learning.
- Children are given the opportunity to practise their keyboard skills in Year 2.
- Knowledge webs are referred to throughout the planning and teaching cycle of a unit to ensure key concepts are taught.

How do we evaluate learning in computing?

- The impact of our computing curriculum can clearly be seen in projects that children create as well as presentations created as digital content.
- Programs that children write code for are captured through video screenshot and accessed through their Seesaw E-book by teachers to ensure achievement of learning objectives.
- Children have the opportunity to self-assess the content they have created, as well as peer-assess. In each year group, children use past learned skills and apply them to new software and coding programs that they are exploring.

The Deputy Head and the computing subject leader monitor the impact of the curriculum using a variety of strategies:

- Scrutiny of e-books and saved projects on the drive
- Pupil voice
- Learning walks and planning
- Skills Trackers
- The priorities set out in the computing action plan are monitored and the targets set are reported upon to ensure the desired impact upon our pupils is achieved.

All of this information is gathered and reviewed. It is used to inform further curriculum developments and provision is adapted accordingly.