

St Andrew's Primary School



Computing Curriculum Overview

Intent:

At our school we want pupils to be digitally skilled individuals who use computational thinking and creativity to understand and change the world.

We understand that our pupils are exposed to digital experiences through everyday life. It is our intention to enable pupils to be able to; use research databases, explore the wider world, analyse the effectiveness of using technology, exchange information and present their findings. Pupils will gain key knowledge and skills in the three main areas of the computing curriculum: computer science (programming and understanding how digital systems work), information technology (using computer systems to store, retrieve and send information) and digital literacy (evaluating digital content and using technology safely and respectfully). Pupils will build on previous knowledge and progress through the objectives within each strand to support the development of learning across the key stages, ensuring a solid grounding for future learning and beyond.

It is paramount to the staff at St Andrew's Primary School that pupils have the knowledge and understanding of how to keep themselves and others safe online and as a result e-safety will be embedded across the curriculum.

We intend to build a computing curriculum that is balanced, stimulating and creative which develops pupils' learning and results in the acquisition of knowledge of the world around them. Computing skills are a major factor in enabling children to be confident, creative and independent learners and it is our intention that all pupils have every opportunity available allowing them to achieve this. Furthermore, it is our intention that all pupils leave us computer literate, prepared for society and having the sufficient knowledge and skills to support future learning and employment.

Implementation:

St Andrew's has recently adopted a scheme of work that offers a comprehensive progression of skills and knowledge, through tangible and challenging tasks, that reflects the school's ambitious intentions for all pupils. Staff are encouraged to follow and adapt the lessons to suit their pupils and provide a learning environment that promotes collaboration, persistence and resilience.

The implementation of the computing curriculum ensures a balanced coverage of computer science, information technology and digital literacy. The children will have experiences of all three strands in each year group, where previously learnt skills and subject knowledge are built upon and

become increasingly more specific and in-depth, as the pupils progress through the school.

To support our pupils in becoming computer literate and preparing them for the wider world, teachers and support staff will be offered training to improve their confidence in teaching computing, to build a solid knowledge base and to ensure there is consistent delivery across the school. Teachers will also demonstrate throughout their daily teaching practices how the use of technology can support learning, how the internet can be navigated safely and the importance of being respectful to other online users.

Embedding the use of technology across the whole curriculum to make learning creative and accessible allows pupils to recognise that digital literacy is not a discrete set of skills. Employing cross-curricular links motivates pupils and supports them to make connections and remember the steps they have been taught. Units of work are carefully sequenced so prior knowledge and concepts are built upon to develop digital literacy, an awareness of online safety and a progressive knowledge of computer science. Pupils will have the opportunity to use technology within every part of the creative curriculum to enrich and develop learning, to practise learnt skills and benefit from teachers who can address any misunderstandings, thus ensuring pupils gain the understanding of the ever developing digital world they are growing up in.

Pupils will be encouraged to use key vocabulary when discussing and presenting key concepts to build upon understanding through a well thought out sequence of lessons. Additionally, pupils will be guided towards having a growth mindset rather than a learned helplessness, which in turn, will naturally lead to collaboration amongst peers. To further support pupils' learning, new concepts will be introduced by bringing them to life. Barefoot computing offers unplugged computing lessons which are available to all teaching staff. These lessons are designed to introduce new concepts so that pupils can build a conceptual understanding. For example, sequencing linked with learning a dance routine and algorithms linked with the process of making a sandwich.

The Computing Curriculum at St Andrew's

Our pupils begin their journey with technology in Early Years, with access to iPads, and BeeBots, as well as some time spent in the computer room using Chromebooks to familiarise them with a desktop setup. As part of the EYFS framework teachers facilitate children's curiosity, creativity, expressiveness and physical and emotional development with challenges and activities by modelling how to use the equipment carefully and safely.

In KS1 pupils continue their journey with the BeeBots, using them more precisely. They learn how to programme a BeeBot to reach a destination and begin to be able to debug when something doesn't work out the way they imagined. Through further use of the Chromebooks in the computer room, pupils will improve their mouse control and learn how to log on and off a computer using their own username and password. They will learn about online safety and what to do if they encounter something which makes them feel uncomfortable as well as what personal information is and why it is important we don't share it with someone on the internet. Furthermore they will begin to progress their coding skills from BeeBots onto a computer-based programme (Scratch Junior) where children learn how to programme a variety of sprites. Pupils will also learn how to take and edit photos and videos, how to design quizzes and how to present data using pictograms.

In KS2, children continue this coding journey using Scratch where they not only make the sprites move, but interact with each other. As children progress through KS2 the coding becomes more complex and they are able to create basic games with code. Their digital literacy skills are combined with cross-curricular activities whereby pupils will have the opportunity to work independently and collaboratively on a range of

Microsoft and Google platforms. Pupils will have the chance to learn how to use the hardware we have in school, where they are taught how to take and modify pictures, edit videos, record and edit audio files. This also provides opportunities to address important PSHE curriculum outcomes for example media manipulation, promoting self-esteem and how to have a safe online footprint. The children are also taught internet safety throughout each year of KS2. This will include how to keep themselves safe online and what to do if they come across something that makes them uncomfortable. KS2 are taught the difference between being a bystander and an upstander and the importance of reporting something they experience happening to themselves or another person, in accordance with our Anti Bullying Policy and our Online Safety Policy. Furthermore, in preparation for secondary school, year 6 pupils will also have the opportunity to take part in Phonesmart training.

Impact:

Our computing lessons encourage pupils to enjoy learning and to develop new skills that embed understanding which will set them up for the next steps of their educational journey. Through an enriched, creative computing curriculum our pupils are able to discuss, reflect and appreciate the impact computing has on their learning, development and well-being.

A robust method for measuring the impact of pupils' learning is important to understand misconceptions and allows the learning to move forward ensuring pupils make progress against the National Curriculum outcomes. Rather than assessing only the end product, here at St Andrew's we assess and celebrate the processes as well. Carefully planned assessment opportunities support pupils' progress towards learning of knowledge, concepts and skills. Furthermore, the pupils' skills and knowledge are assessed throughout lessons, through formative assessment, including those skills gained in collaboration tasks. Effective questioning techniques that check what the pupils have learnt such as: hinge questions, cold calling, no opt-out, say it again, say it better, think, pair, share and whole class responses encourage pupils to understand the why rather than just the how. Pupils are also given regular opportunities to feed back to their teachers on their progress within lessons.

The development of a digital sharing platform will allow pupils to showcase, share, celebrate and publish their work will best show the impact of our computing curriculum. This platform will enable pupils to work collaboratively as well as evaluate their own work and that of their peers. Implementing this way of sharing work provides the chance for pupils to verbally record their reflections as well as an opportunity for staff and subjects leaders to assess progression throughout the school in a more summative form of assessment.

Our pupils will leave school having a secure and comprehensive knowledge of the implications of technology and digital systems. The subject-specific knowledge developed in our computing lessons equip pupils with experiences which will benefit them in secondary school, further education and future workplaces. From research methods, use of presentation and creative tools and critical thinking, computing at St Andrew's Primary gives children the building blocks that enable them to pursue a wide range of interests and vocations in the next stage of their lives.

Teach Computing Curriculum

Primary Journey

KS2 
Teacher guide

← KS3 computing

← GCSE Computer Science

Next steps

Using the micro:bit
for primary
to secondary
transition **OPTIONAL**

3D modelling

Variables
in games

Communication
and collaboration

Sensing
movement

Introduction to
spreadsheets

Webpage
creation

Year
6

Selection in
quizzes

Vector
graphics

Flat-file
databases

Video
production

Selection in
physical
computing

Systems and
searching

Year
5

Photo
editing

Repetition
in shapes

Audio
production

Data
logging

Repetition
in games

Year
4

Events and
actions in
programs

Desktop
publishing

Sequencing
sounds

Connecting
computers

Branching
databases

Stop-frame
animation

Year
3

Programming
quizzes

Digital
music

Pictograms

Robot
algorithms

Information
technology
around us

Digital photography

Year
2

Programming
animations

Grouping data

Digital painting

KS1 
Teacher guide

Year
1

Technology
around us

Moving a
robot

Digital writing