Stocks Green Primary School

Learning to Live, Living to Learn

Computing

Written October 2023

Intent - What are our curriculum aims?

At Stocks Green Primary School, **our computing curriculum is designed to meet our curriculum aims** which are to:

- recognise children's prior learning
- provide first hand learning experiences
- promote creativity
- make connections between subjects and real life
- promote safe, equal, caring and enjoyable relationships and discussing real-life situations appropriate to the age and stage of pupils
- encourage the children to develop interpersonal skills
- build resilience and become creative, critical thinkers
- understand their own strengths and areas for development and know how to face challenges
- promote responsibility for learning and future success

Further to this, we have specific aims for pupils leaving our school having experienced our computing curriculum. We intend that all **pupils understand and apply the fundamental principles and concepts of 'Computer Science', 'Information Technology' and 'Digital Literacy'**. We ensure pupils can analyse problems in computational terms and that they get to experience a variety of different computer programs. This is part of our intent because, as a school, we recognise that we are preparing pupils to work in a digital world beyond that which they currently engage with and for careers that may not yet exist. Therefore, the **building of transferable skills forms a core principle in our computing curriculum**. We intend for pupils to evaluate and apply known, new and unfamiliar information technologies analytically. However, we also recognise the **school's responsibility in preparing pupils to be responsible, competent, confident and creative users of information and communication technology and represent themselves in the digital world in a safe and respectful way**.

Our computing curriculum is designed to **ignite children's interest in the digital world**. We aim that in every computing lesson children know more and remember more of our curriculum. Our computing curriculum extends beyond the breadth of the National Curriculum to include a rich variety of **engaging** and **exciting** technologies and programmes that allow children to develop the transferable skills necessary for future success. This includes engaging with high quality robotics projects in every year group. Progression of knowledge, skills and vocabulary are all **systematically planned** so that by the end of Year 6, pupils are ready for the next stage of their education. The teaching of computing in our school is intended to **empower** pupils with the declarative knowledge (knowing that) and procedural knowledge (knowing how) to enable skilful and discerning use of technology. This knowledge is identified, sequenced and connected in the curriculum.

Our **curriculum pedagogy** is based on four distinct stages which aim develop children's knowledge over time as well as provide them with opportunities to apply that knowledge and express what they have learnt.

Engage	Develop	Innovate	Express
Engage in memorable experiences that stimulate children's curiosity, leading them to ask questions and talk about their prior learning.	Develop new skills and knowledge by delving deeply into a theme, where children make links, create, explore, make, read and write.	Innovate by returning to prior knowledge and skills so that children can use and apply these in new contexts (in and out of school).	Express what has been learned by providing opportunities for children to reflect, test their knowledge and celebrate their achievements.

Stocks Green Primary School

Learning to Live, Living to Learn

Computer Science	Information Technology						Digital Literacy			
Programming and Control	Digital Artefact - Text	Digital Artefact - Data	Digital Artefact - Images	Digital Artefact - Video	Uses of Technology in the World	Using the Internet	Content	Contact	Conduct	Commerce

Implementation – How do we achieve our aims?

Mapping concepts

Within the themes of 'Computer Science', 'Information Technology' and 'Digital Literacy", we have identified key concepts, including Programming and Control; Digital Artefacts of Text, Data, Images, Video; Uses of Technology in the World, Using the Internet, Content, Contact, Conduct and Commerce. These are highlighted through the use of lenses so that **key concepts are built on, retrieved and become stored in children's schemata over time**.

For example, through the lens of 'Digital Artefacts – Images', children learn to take images in EYFS. In Year 1, they compare the use of different hardware to capture images. In Year 2, they learn to make simple edits to photographs using technology. In Year 3, they learn to manipulate photographs using editing software. Building on this knowledge in Year 4, children learn to combine images and sound using a digital device. In Year 5, they learn to manipulate an image using a more complex digital program. By Year 6, the children learn how to manipulate an image using augmented reality software.

Progression and sequencing

The computing curriculum has been **designed to provide the children with the knowledge required to have successful careers in computing**. Each lens has been carefully considered to build over time and with an onward trajectory of a future career in computing. For example, the 'Digital Artefact – Images' lens provides the children to the transferable skills necessary to be successful in secondary school and move on to have a career in photo editing. Our computing curriculum is designed to be taught in a particular order so that children build their historical knowledge and skills over time. The lessons in each of the lenses is written in sequence. Sequencing is really important, as children should not be undertaking tasks or be introduced to new concepts without having the required prior knowledge.

Stocks Green Primary School

Learning to Live, Living to Learn

Lesson design and curriculum delivery

Lessons are designed to **build children's prior learning** by analysing the content of the lens taught in previous year groups. This is achieved through carefully planned retrieval practice that links knowledge built over time to the current learning. Within a lesson, there is clear modelling of new concepts so that children build the procedural knowledge necessary to be successful within the sequence of learning. Opportunities to develop their knowledge, innovate and express their learning take the form of problem solving questions closely related to the explicit teaching that took place at the start of the lesson. In this way, children get plenty of opportunities to apply their developing skills both within and across a series of lessons to ensure it is embedded in their long term memory.

High-quality questioning, be it the 'learning question' for the lesson or targeted verbal questioning, actively seeks to check understanding and identify any emerging misconceptions. Questions are carefully mapped against the stage within a sequence of learning to ensure they are pitched appropriately.

Exploring technology

To be successful in computing, the school believes that children should have the **opportunity to engage with a range of different technologies** and use them for different purposes. As such, the school has invested in different form of robotics equipment, software, i-Pads and laptops to increase the children's exposure to different technologies and apply their learning across different platforms.

Building vocabulary

We know how important is to teach children correct subject vocabulary. Rather than a one–off approach, we've built **consistent use of vocabulary** across each of the lenses. For instance, children become familiar with terms, such as debugging, algorithms, and inputs and outputs. This helps them to become increasingly confident in using them in different contexts. The developing vocabulary used is outlined within the progression of knowledge and skills.

Pupil Outcomes

We believe that learning is **most powerful when it serves a purpose**. Therefore, expectations for pupil outcomes and are based, as often as possible, on serving a greater purpose. For example, when teaching website creation, children create websites to showcase their learning in other areas. The high expectations for pupils outcomes and provides opportunities for them to showcase these outcomes within the classroom or on the computing blog. Learning is captured through the use of knowledge floor books and, where appropriate, computing outcomes can be found in other subjects. Pupil learning is captured through pupil voice, assessment for learning and retrieval practice.

We **define progress in computing as children 'knowing and being able to do more'**. Our curriculum provides opportunities to see what knowledge children have retained and what skills they have mastered through carefully planned retrieval practice which help teachers to make judgments about each child's progress and attainment.

Impact – How will we know we've achieved our aims?

Outcomes

The impact of our curriculum can be seen through the pupil's ability to be discerning digital citizens, their ability to adapt to new technologies and problem solve in different contexts. They will be seen to have transferable skills that they can apply across different technology, platforms, software and subjects.

Staff assess pupils against the progression document at the end of sequences of learning by exception. Assessment takes place through a formative approach in all lessons and cumulatively builds up a picture of the children's learning. This is recorded on Arbour and analysed by the computing subject leads to further develop and enhance our curriculum to ensure it meets its stated intents.