Computing Curriculum Policy

Intent

Our aim is to provide a high-quality computing education which equips children to use computational thinking and creativity to understand and change the world. The computing curriculum at Baguley Hall is carefully planned and structured to ensure that current learning is linked to previous learning and that the school's approaches are informed by current pedagogy. In line with the national curriculum 2014 the curriculum will teach children key knowledge about how computers and computer systems work, and how they are designed and programmed. Learners will have the opportunity to gain an understanding of computational systems of all kinds, whether or not they include computers.

By the time they leave Baguley Hall, children will have gained 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). The objectives within each strand support the development of learning across the key stages, ensuring a solid grounding for future learning and beyond.

Implementation

At Baguley Hall, computing is taught using a blocked curriculum approach. This ensures children are able to develop depth in their knowledge and skills over the duration of each of their computing topics. Children are taught Computing in key stages: KS1, LKS2 and UKS2. This ensures that all children receive a quality and focussed Computing curriculum. Teachers identify the key knowledge and skills of each topic and consideration has been given to ensure progression across topics throughout each year group across the school. These topics are then linked to the UNCRC, as we are a Rights Respecting School (RRS), and to Peace Mala, both of which underpin the School's ethos. By the end of year 6, children will have gained 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). The objectives within each strand support the development of learning across the key stages, ensuring a solid grounding for future learning and beyond.

The implementation of the curriculum also 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, but the subject knowledge imparted becomes increasingly specific and in depth, with more complex skills being taught, thus ensuring that learning is built upon. For example, children in Key Stage 1 learn what algorithms are, which leads them to the design stage of programming in Key Stage 2, where they design, write and debug programs, explaining the thinking behind their algorithms.
Planning is informed by and aligned with the national curriculum. Consideration is given to how greater depth will be taught, learnt and demonstrated within each lesson, as well as how learners will be supported in line with the school's commitment to inclusion. Outcomes of work are regularly monitored to ensure that they reflect a sound understanding of the key identified knowledge. Within our knowledge-rich approach, there is a strong emphasis on people and the community of our local area.

The Early Years Foundation Stage (EYFS) follows the 'Development Matters in the EYFS' guidance which aims for all children in reception to have an 'Understanding of the World; recognise that a range of technology is used in places such as homes and schools by the end of the academic year.

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Impact

Outcomes in document folders, evidence a broad and balanced computing curriculum that shows progression and demonstrates the children's acquisition of identified key skills. Children review learning objectives at the end of every lesson and are actively encouraged to identify their own target areas, with support from their teachers. In addition, we measure the impact of our curriculum through the following methods:

♣ A reflection on standards achieved against the planned outcomes
♣ Children can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation;
♣ Children can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems;
♣ Children can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems;
♣ Children are responsible, competent, confident and creative users of information and communication technology.
♣ Pupil discussions about their learning;

EYFS

Despite computing not being explicitly mentioned within the Early Years Foundation Stage (EYFS) statutory framework, which focuses on the learning and development of children from birth to age five, there are many opportunities for young children to use technology to solve problems and produce creative outcomes. In particular, many areas of the framework provide opportunities for pupils to develop their ability to use computational thinking effectively, such as, pupils can think about the steps involved in getting dressed for winter, decomposing the overall task into constituent tasks and then sequencing the instructions (writing an algorithm).
As young children take part in a variety of tasks with digital devices, such as moving a Bee Bot around a classroom, they will already be familiar with the device before being asked to undertake tasks related to the key stage one (KS1 - ages 5 - 7 years) computing curriculum, such as writing and testing a simple program. Not only will children be keen to again use a device they had previously enjoyed using, their cognitive load will also be reduced, meaning they are more likely to succeed when undertaking activities linked to the next stage in their learning.
The Development Matters (pg. 2) document states of best practice in early years is creative, active, exploratory, playful and encourages critical thinking, thus the activities below have been included to meet these criteria where feasible. Tasks are outlined for each area of the EYFS framework and have been shared with EYFS class teachers, although many other opportunities exist to use technology with younger children; particularly when linked to a topic studied within class.

Key Stage 1

In Key Stage 1 teachers follow the Rising Stars, Switched on Computing scheme, every year group completes five units across the year and a unit of online safety. Online safety will also be ongoing with coverage throughout all units where appropriate.
In Key Stage 1 children are introduced to the three strands of Computing - computer science (CS), information technology (IT) and digital literacy (DL).
Children take part in a 45-minute computing session each week and this is delivered by the class teacher.
In Key Stage 1, classes have access to continuous provision. When appropriate, children will be given the opportunity to further develop the skills they have learnt in their sessions independently, for example children might use an algorithm to programme a Beebot to get to a specific shape/area in the classroom or use iPads to create digital images, videos and photographs.

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Key Stage 2

Throughout Key Stage 2 the curriculum builds on the three strands taught in Key Stage 1, computer science (CS), information technology (IT) and digital literacy (DL).
The core of computing is 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. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world. The children in key stage 2 participate in a 45-minute computing skills lesson per week building on prior knowledge, all classes are taught by the computing coordinator. Where there are mixed classes in key stage 2 each year group is taught separately to enable children to access the skills progression appropriately. All year groups follow the rising stars, Switched on Computing Curriculum, every year group completes four units across the year and a unit of online safety. Online safety will also be ongoing with coverage throughout all units where appropriate.

Teaching and Learning

Our curriculum for Computing uses the scheme, Rising Stars, Switched on Computing. We have been using this scheme since 2016 and re-evaluated it in April 2020. Through evaluating the scheme, we have been able to modify which software and hardware we use and also the impact of the units.
To help further develop awareness of online safety we are in the process of trialling units from Project Evolve which provides sessions for each year group about each area of online safety.
To ensure children are using the skills learnt during computing, sessions have been set aside for children to complete work from other subjects including their computing skills e.g. creating an online presentation about a significant event in History.
Computing in KS1 is taught by each class teacher whereas in KS2 every computing lesson is taken by the schools computing lead teacher, Mrs Batters. We aim to always have 2 adults in the classroom whilst computing is taking place to help ensure that all children are supported fully.
Each Rising Stars Computing starts with a `We are…` Through discussion children will be made aware of what their role is during the unit and the end of unit expectations will be shared with the children through the digital learning mat. This also shows children any topic specific vocabulary, these words will be discussed with children and referred to each session. The scheme generates a detailed plan for each session, this is linked to the national curriculum.

Assessment

Assessment for learning is continuous throughout the planning, teaching and learning cycle. Key historical knowledge is taught to enable and promote the development of children's historical enquiry skills. Assessment is supported by use of the following strategies:

- Observing children at work, individually, in pairs, in a group and in class during whole class teaching.
- Using differentiated, open-ended questions that require children to explain and unpick their understanding.
- The use of Knowledge organisers or 'sticky knowledge' is used in every lesson, so that children can guide their own learning as well as understand key vocabulary for each topic that they study.
- Providing effective feedback, both written and verbal, where appropriate.

- Monitoring of outcomes of work, to evaluate the range and balance of work and to ensure that tasks meet the needs of different learners, with the acquisition of the pre-identified key skills/knowledge of each topic being evidenced through the outcomes. Children to save named work into a class weekly folder to enable monitoring.
- Use of the 'what I know already, what I want to know and what I have learnt' (KWL) strategy throughout a unit, alongside specific and measurable learning objectives (WALT) for each lesson with child and teacher review of the agreed success criteria.

Equal Opportunities and Inclusion

At Baguley Hall Primary school 'Putting children first,' is our motto and we are committed to providing a teaching environment which ensures all children are provided with the same learning opportunities regardless of social class, gender, culture, race, special educational need or disability. Teachers use a range of strategies to ensure inclusion and also to maintain a positive ethos where children demonstrate positive attitudes towards others. Peace Mala and RRS is reflected in all that we do, not just in learning but in the way that we act every day. Support for specific individuals is well considered and planned for, with consideration given to how greater depth and further challenge can be provided for and demonstrated by children who require further challenge. All pupils are entitled to access the computing curriculum at a level appropriate to their needs.

To ensure inclusion, teachers use a range of strategies in line with the school's inclusion planning key. Independent tasks, as well as teaching, are also well-adapted to ensure full accessibility and reasonable adjustments are made when needed, as well as to provide appropriate challenge to different groups of learners. The school makes full use of additional adults who are deployed effectively to ensure that identified children are able to make progress in each curriculum area, according to their full potential. Through the use of KWL, teaching takes account of children's own interests to ensure topic relevance to all individual learners.

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