Computing Curriculum

Intent

Computing at Bushbury Hill Primary School intends to develop 'thinkers of the future' through a modern, ambitious and relevant education in computing. We want to equip pupils to use computational thinking and creativity that will enable them to become active participants in the digital world. It is important to us that the children understand how to use the ever-changing technology to express themselves, as tools for learning and as a means to drive their generation forward into the future.

Whilst ensuring they understand the advantages and disadvantages associated with online experiences, we want children to develop as respectful, responsible and confident users of technology, aware of measures that can be taken to keep themselves and others safe online.

Our aim is to provide a computing curriculum that is designed to balance acquiring a broad and deep knowledge alongside opportunities to apply skills in various digital contexts. Beyond teaching computing discreetly, we will give pupils the opportunity to apply and develop what they have learnt across wider learning in the curriculum.

Implementation

Our scheme of work for Computing is adapted from the 'Teach Computing' Curriculum and covers all aspects of the National Curriculum. This scheme was chosen as it has been created by subject experts and based on the latest pedagogical research. It provides an innovative progression framework where computing content (concepts, knowledge, skills and objectives) has been organised into interconnected networks called learning graphs.

The curriculum aims to equip young people with the knowledge, skills and understanding they need to thrive in the digital world of today and the future. The curriculum can be broken down into 3 strands: computer science, information technology and digital literacy, with the aims of the curriculum reflecting this distinction.

The national curriculum for computing aims to ensure all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation (Computer science)
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems (Computer science)
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems (Information technology)
- are responsible, competent, confident and creative users of information and communication technology. (Digital literacy)

In addition to the scheme, Bushbury Hill Primary School works alongside Engagedu who support schools to improve outcomes and engagement. They use innovative approaches to provide comprehensive educational resources and support to students and educators. Together with Engagedu we try to promote the use of technology in a digitally thriving world by completing projects linked to various areas of the wider curriculum.

Children are also given multiple opportunities to demonstrate their knowledge and understanding in other subjects as we recognise that computing underpins learning across the curriculum. Teachers have identified the key knowledge and skills of each blocked topic and consideration has been given to ensure progression across topics throughout each year group across the school. At the beginning of each topic, children are able to convey what they know already as well as what they would like to find out. This informs the programme of study and also ensures that lessons are relevant and take account of children's different starting points. 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.

This scheme of learning:

- offers a comprehensive yet balanced approach in addressing safety and security concerns, including ethics and behaviour issues, as well as digital literacy skills
- provides child-centred, media-rich lesson materials that emphasize skill building, critical thinking, ethical discussion, media creation, and decision making
- addresses the whole community by providing materials to educate parents and families about digital citizenship
- provides additional resources and links and suggestions for curriculum opportunities

To help with our implementation of the computing curriculum we have a variety of hardware available to all teachers, including:

- 6 sets of 15 iPads
- 2 sets of 16 laptops
- Class sets of 10 laptops
- 3 sets of 6 Bee Bots (Programmable Toys)

Each classroom is provided with:

- Visualiser
- Class camera
- Teacher iPad – with air server access
- Teachers/TA laptop
- Interactive Whiteboard or Small Screen (in break out rooms)

All children are provided with Microsoft Teams accounts and emails so that work can be accessed in school and remotely.

Impact

Outcomes of pupils' work are evidenced within year group folders on our school's site and the progress and attainment of all children is updated at the end of each taught unit on a computing assessment tracker with the Non-Core assessment tracker for every cohort. We provide a broad and balanced computing curriculum that demonstrates children's acquisition of identified key knowledge. Children review their successes in achieving the set objectives at the end of every topic and are actively encouraged to identify their own target areas. Children also record what they have learned comparative to their starting points at the end of every topic. As children progress throughout the school, they develop a deep knowledge, understanding and appreciation of how technology works. Through their growing knowledge and understanding of computing, children gain an appreciation of modern life in different societies, helping to develop a sense of how technologies are used in other cultures, and how nations rely on each other in our 21st century world.