Computing
Policy and Guidelines

This policy and guidelines cover all key stages and all wrap around and after school activities.

Definition of Computing

The terminology regarding Computing is generally interpreted to mean the programming (through the creation of algorithms) and use of any equipment, which allows users to communicate or manipulate information (in the broadest sense of the word) electronically. By this we mean that information is gathered, stored, processed, presented and communicated using micro-electronic systems and algorithms created to program devices or create controlled processes within programming software on different platforms (such as iPads or computers). Online Safety is also a vital part of the Computing curriculum. Online safety regards the safe and respectful gathering, use, storing and sharing of digital information and what to do when this safety may be breached, such as through, though not limited to, account hacking, inadvertently sharing data or cyber-

Intent

Through teaching computing, we equip our children to participate in a rapidly changing world where work and leisure activities are increasingly transformed by technology. It is our intention to provide children with a wealth of learning opportunities, explicitly within computing and also across other curriculum subjects. We intend to provide children with the opportunities to find, explore, analyse, exchange and present information in a safe and effective way. The National Curriculum defines three clear aspects of computing: Computer Science, Information Technology and digital Literacy. Children will be given the opportunity to develop their knowledge and understanding in each of these areas.

Implementation

At our school we believe that a clear and effective scheme of work that provides coverage in line with the National Curriculum is essential to meet the requirements of our children in order for them to thrive. Teaching and learning facilitates progression across all key stages within the strands of digital literacy, information technology and computer science. In KS1, one of the ways we are teaching the pupils about the language and concepts associated with computer programming is by using Bee Bots and Pro-bots, which are simple programmable robots. Children in KS2 have access to the hardware (computers, tablets, and programmable equipment) and software that they need to develop knowledge and skills of digital systems and their applications. Computing is implemented across all aspects of our school curriculum, with one example being the use of Times Tables Rockstars during Maths lessons.

National curriculum for computing and our progress of skills within each milestone aims to ensure that all pupils:

- Are confident in using code and can understand and apply the fundamental principles and concepts of computer science, including logic, algorithms and data representation

- When coding, pupils can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems

- Effectively communicate and can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems

- Able to connect with others responsibly and are competent, confident and creative users of information and communication technology.

Cockfield Primary School takes internet safety extremely seriously. We have an E-Safety Policy that provides guidance for teachers and children about how to use the internet safely. Every year group participates in lessons on e-safety and children understand how to stay safe when using technology.

Objectives

The school will seek to deliver the National Curriculum through the programmes of study (POS) for Computing as detailed in the school's curriculum guidelines for Computing.

We will seek to achieve the aims by:

- Gaining experience of Computing as appropriate through cross-curricular activities in a variety of contexts.
- Develop related skills and encourage their use within the curriculum.
- Allowing opportunities for progression and continuity as identified in long-term and medium-term planning.
- Meeting the requirements of the National Curriculum.
- Delivering, monitoring, assessing and recording Computing skills by ensuring coverage, progression and continuity within and across key stages.

Teaching Methodology

Teaching Strategies
Computing skills are taught both discretely and across the curriculum. There are different models for the teaching of skills including:
- Teacher or adult demonstration to the class or groups - specific skills e.g. programming, change font size, cut and paste etc.
- Teacher or adult role-model to a group - e.g. story writing, filmmaking.
- Teacher resource/tool - e.g. video conferencing, sharing talking story, capturing/ sharing evidence, manipulate text with group or class (identify verbs, change tenses

- Teacher tool – using the computer as an electronic whiteboard when brainstorming or interactive resources;
- Teacher monitors progress and intervenes appropriately while pupils work at computer - e.g. opportunities to demonstrate, or share possible difficulties or solutions with whole class.
- Allowing structured pupil led exploration and intervening where appropriate to maximise pace and progression.

Coverage, Progression and Continuity for the Development of Computing Skills

To ensure that Computing is taught in a systematic, progressive and effective way Cockfield Primary School plans for Computing in the long, medium and short term. Long-term plans are created in consultation with subject advisors from Education Durham (the local authority).This is designed to ensure that the requirements of the National Curriculum for Computing are met, pupils develop their knowledge, understanding and skills regarding online safety and that good progression is maintained. Teachers choose which parts of the curriculum to cover each term to best suit the needs of their class and help embed Computing in the wider curriculum and class topic.

Medium term unit planning is created by teachers using the long-term plan as a starting point and adapt teaching and learning to meet the needs of their classes.

Medium term plans contain broad learning outcomes that identify the knowledge, skills and understanding that pupils will gain and, in some cases, suggest links to other subjects and resources.

Short term planning is done weekly and describes how a teacher delivers the objectives from the medium term plan. Short term plans are differentiated as appropriate and reviewed in light of on-going assessment to cater for the mixed-age classes within our school and ensure challenge, pace and progression for all groups of pupils.

Cockfield Primary School's Computing planning is adapted to suit the needs of the school, its pupils and the creative curriculum across a two year rolling curriculum. Online Safety is planned for within these units to ensure that pupils develop the knowledge, understanding and skills to stay safe online.

Teaching Methods

Pupils will generally use digital equipment such as laptops and iPads in their classrooms though work may be undertaken in other locations with adult supervisions. The majority of Computing activities will be paired or group work, using software related to the current subject/topic. New skills will generally be taught to the whole-class and reinforced by group/pair or individual work. All use of equipment will take into account the need to ensure that online safety is maintained at all times and that GDPR requirements are met.

Roles and Responsibilities

The role of the Subject leader is to:
- Co-ordinate, develop and implement the school's written policy.
- Advise staff on long, medium and short term planning.
- Encourage and support the use of Computing across the school.
- Ensure that online safety is adhered to by all members of the school community and promote online safety to parents and careers.
- Ensure a co-ordinated approach to curriculum delivery.
- Evaluate the effectiveness of Computing activities across the school.
- Ensure effective use of resources/ purchase of new resources.
- Over-see implementation of LA. initiatives.
- Identify INSET related needs.
- Liaise with other schools and Durham ICT services.
- Keep abreast of current developments in the field of Computing; including online safety.
- Liaise with the shared- technician on the safe use and maintenance of equipment and software.

The specific role of the Head Teacher is to:

- Ensure that Governors are kept informed in the developments of Computing.
- Monitor the work of the Computing Subject Leader and develop targets for future development as necessary.

Staff will:

- Report to parents about Computing achievement at least once per year.
- Ensure progression in Computing skills and activities with due regard to the Computing Scheme of Work and National Curriculum.

- Adhere to the school's online safety policy at all times and report incidents to the Designated safeguarding lead or the Computing Lead.
- Become increasingly more confident and competent in the delivery of Computing by developing the ability to:
- Use computer peripherals where appropriate e.g. digital telescope, digital cameras,
- Beebots, sound recorders etc;

- Become familiar with the range of software covering all areas of the curriculum
- Develop an awareness of the potential uses of software and differentiate it to meet individual needs
- Develop Computing and general ICT skills to be able to use computers effectively

Staff Development

Staff will be kept up to date with developments regarding online safety.

Staff will be encouraged to:

- Develop and update their skills, knowledge and understanding of Computing.
- Identify their Computing INSET needs and take advantage of training opportunities both at school and LA based.

Resource Management

The Computing subject leader/ shared ICT technician will:
- Annually audit hardware/software (adding or planning for new resources where need is identified).

- Check how resources are organised and hardware and software deployed against strands and year groups.
- Ensure no copyright issues occur.
- Work with the shared ICT technician to identify and rectify problems.

Health and Safety

The school is committed to pay due regard to the health and safety of pupils and staff when using Computing equipment both in regards to the physicality of using digital equipment and in regards to online safety and GDRP regulations. The school has separate policies for online safety and data protection as well as acceptable use policies for staff, pupils, visitors and staff using the school's official social media platforms.

To ensure the safety of everyone at Cockfield Primary School the following MUST be adhered to by all staff:

- The online safety policy must be adhered to at all times.
- Monitors must be safely positioned.
- Appropriate seating and lighting for everyone.
- No amateur repairs allowed at any time.
- Workstations positioned appropriately e.g. Not next to sand or water tray; not too close to blackboard chalk.
- Workstations to be kept clean and tidy.
- Problems with machinery should be reported to the co-ordinator
- Used electrical equipment must have passed the Annual PAT test.
- Staff and pupils to avoid looking into projector beams.
- Laptops and iPads returned to their safes every night.
- Suspected breaches of online safety reported to the head designated safeguarding lead (Headteacher) or subject leader promptly.

Monitoring, Assessment, Recording and Reporting

Assessment is a key element of effective teaching and learning being that it informs the successful deliverance of future lessons in a continuing cycle. As such teachers should undertake the task of assessing the children's work in accordance with the school's policy. Teachers use a range of monitoring and evaluating techniques to carry out formative assessment. This is then used to inform future lessons to address weaknesses/ misconceptions and ensure good pace and progression.
At the end of each lesson teachers should note those children who have made less, expected or more progress than expected. For those that have achieved less or more than what was to be expected the teacher may choose to alter the following lessons to cater for this as necessary. Evidence of attainment for individual children can be found in their folders on the school server though evidence of work

undertaken using other hardware such as iPads and Beebots may be found in topic books.

The school monitors children's progression in Computing by forming assessments about those children that are above, inline and below national expectations in the subject by assessing the skills covered in each year group. Foundation stage teachers wilt complete the Foundation Stage Profile. Ongoing assessment is an integral part of Computing delivery. At least annually, the subject leader will assess delivery, progression and attainment regarding Science with targets and changes to the curriculum made in light of this where necessary. An audit of achievement in Computing in the school is carried out annually by the subject leader and will be kept in the subject leader's file.

At the end of each year class teachers are required to report to parents on their child's/ children's attainment in Computing. Class teachers must also report to the head teacher/ subject leader on the number of children in their class working below/ inline/ or above expectation in their class so as to allow the school to monitor and assess the impact of teaching and learning and identify strengths, weaknesses and areas for improvement.

This will help to evidence and track the child's progression and also allow the school to further monitor and assess the impact of teaching and learning and identify strengths, weaknesses and areas for improvement when monitoring sketchbooks and works of art.

SEND - refer also to SEND Policy and the Code of Practice

Computing will be used to help meet the Special Educational Needs of all pupils, including those identified as being more able or talented, in order to maximise their access to the curriculum and to support their learning.

Resource Management

Digital technology and its use in the wider world are continuously evolving. The school is therefore committed to reviewing the use of Computing resources. The school will ensure the efficient deployment of existing Computing resources and develop strategies for their replacement and for further purchasing to meet future needs.

To ensure that the school is equipped to effectively deliver the computing curriculum in the future hardware/ software is audited annually by the shared technician and findings reported to the Headteacher and Computing subject leader. This is used to draw up budgeting plans for the next 3 years to ensure equipment does not become out-dated and can be replaced.

Impact

Cockfield Primary School takes immense pride in the teaching and learning of computing and strive to ensure that every child can become a confident user of technology, while being able to use it to accomplish a wide variety of goals, both at home and in school. Children will have a secure and comprehensive knowledge of the implications of technology and digital systems by the time they leave our school. This is important in a society where technologies and trends are rapidly evolving. They will be able to apply the British values of democracy, tolerance, mutual respect, rule of law and liberty when using digital systems, which will hold them in great stead in their future endeavours.

Computing in the Early Years

It is important in the Early Years stage of schooling to give children a broad, play based experience of computing in a range of contexts, including outdoor play. Children in Early Years settings, experience a wide range of technologies throughout their play including; Ipads, computers, cameras, beebots and interactive whiteboards. They use these forms of technologies to access age appropriate software, to provide opportunities for mark making as well as supporting their imaginative play, often reenacting real life experiences both inside and outside of the classroom. Children thrive on the ability to incorporate technology into their learning and through careful planning of their continuous provision, Early Years practitioners are able to provide a number of devices for children to use competently and independently, to support child led learning. In addition to this, technology is a fantastic tool to enable children to build confidence, control and improve language development through specific online programs. Recording devices can support children to develop their communication and language skills further as well as building simple IT skills. This is particularly useful with children who struggle to communicate effectively.