Brook Community Primary School

Computing policy

Rationale:

The 2014 national curriculum introduces a new subject, computing, which replaces ICT. Computing is concerned with how computers and computer systems work; how they are designed and how they are programmed.
The focus of the new programme of study undeniably moves towards programming and other aspects of computing as a science. There is more to computing than programming, however. Computing incorporates skills and procedures for solving problems and includes a distinctive way of thinking and working. The place of programming within computing is akin to that of practical investigations in the other sciences – it provides motivation and a context within which ideas are presented and placed in context.

Just as we give every pupil the opportunity to learn the workings of physics, chemistry, and biology, because they live in a physical, chemical and biological world, so we offer every student the opportunity to learn the workings of the digital systems that permeate our increasingly digital world.

The study of computing encourages a unique way of thinking about problems that uses the powers of logic, algorithm, precision and abstraction. It allows us to solve problems, design systems, and understand the power and limits of human and machine intelligence.

Aims:

At Brook we aim to enable children to:

- Understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation;
- Analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems;
- Evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems;
- Become responsible, competent, confident and creative users of information and communication technology;
- Apply computing skills and knowledge to learning in other areas;
- Use computing skills to develop language and communication skills;
- Explore attitudes towards computing and its value to society. For example, to learn about issues of security, confidentiality and safety.

Computing curriculum planning:

The school uses the national guidelines as the basis for its curriculum planning.

We carry out the curriculum planning for computing in three phases (long-term, medium-term and short-term). The long term plan maps the computing topics that the children study in each term during each key stage. Our medium-term plans, which

we have adopted from the national attaintment targets, give details of each unit of work for each term, identifying the key learning objectives for each unit of work. Short-term plans list the specific learning objective of each lesson.

The topics studied in computing are planned to build upon prior learning. While we offer opportunities for children of all abilities to develop their skills and knowledge in each unit, we also build planned progression into the scheme of work so that children are increasingly challenged as they move through the school.

Attainment targets:

Foundation Stage:

Within the Foundation Stage, pupils will have the opportunity to develop their computing skills through a range of structured and exploratory activities which will:

- Develop confidence in the use of computing, including the use of digital cameras, Ipads, interactive whiteboards and computers;
- Enable pupils to become familiar with the use of the keyboard and mouse;
- Increase pupils' understanding of the place of computing in today's world;
- Allow pupils to take greater responsibility for their own learning and decide when it is appropriate to use computing.

Key Stage One:

Within Key Stage One, pupils will have the opportunity to further develop their computing skills through a range of structured and exploratory activities which will enable them to:

- Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- Create and debug simple programs
- Use logical reasoning to predict the behaviour of simple programs
- Use technology purposefully to create, organise, store, manipulate and retrieve digital content
- Recognise common uses of information technology beyond school
- Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

Key stage two:

Within Key Stage two, pupils will have the opportunity to consolidate their computing skills through a range of structured and exploratory activities which will enable them to:

- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- Use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration
- Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

The contribution of computing to teaching in other curriculum areas:

Computing contributes in some way to all other curriculum areas. The school has a wide range of programmes that can be used on the interactive whiteboards, tablets, computers or chromebooks to support curriculum subjects. Computing also has deep links with mathematics, science, and design & technology, and provides insights into both natural and artificial systems.

Teaching computing to children with special needs:

At Brook School we teach computing to all children, whatever their ability. Computing forms part of our school curriculum policy to provide a broad and balanced education for all children. We provide learning opportunities that are matched to the needs of children with learning difficulties and take account of the targets in the children's provision maps.

We recognise that all classes have children with widely differing computing abilities. This is especially true when some children have access to computing equipment at home, while others do not. We provide suitable learning opportunities for all children by matching the challenge of the task to the ability and experience of the child. We achieve this in a variety of ways, by:

- Setting common tasks which are open-ended and can have a variety of responses;
- Setting tasks of increasing difficulty to extend and deepen learning;

- Providing resources of different complexity that are matched to the ability of the child;
- Using teaching assistants to support the work of individual children or groups of children.

Equal Opportunities:

We do not discriminate against anyone, be they staff or pupil, on the grounds of their sex, race, colour, religion nationality, ethnic or national origins. We ensure that all pupils have access to the full range of educational opportunities provided by the school.

Assessment and recording:

Teachers assess children's work in computing by making informal judgements as they observe them during lessons and undertake continual assessments via the computing programme currently in use so that by the end of a unit of work, an assessment can be made about the work of each pupil. This information is passed to the next teacher at the end of the year.

Our whole-school assessment system also allows us to track children's progress through the computing programmes of study within and across years. This provides a holistic view of children's attainment in computing as they progress through the school.

Resources:

Brook Community Primary school has a number of resources to support and enhance the teaching of computing. All classrooms are equipped with interactive whiteboards, with new interactive touch panels being rolled out to classrooms. A selection of the hardware and software used in the school are listed below:

Hardware:

- Colour printers;
- Scanner;
- Digital cameras;
- Video cameras;
- Soundboards;
- Electronic keyboards;
- Calculators;
- Roamers;
- Hand held roamers;
- Control technology;
- Ipads;

- Chromebooks;
- Laptops;
- Desktop computers

Software:

- Google classroom suite;
- Google drive, including Google docs and Google slides;
- Word processing software;
- Design software;
- 'Beebots' algorithm programme;
- 'Purple Mash' algorithm and coding programme;
- 'Scratch' MIT-developed coding programme.

The role of the subject co-ordinator:

The monitoring of the standards of the children's work and the quality of teaching in computing is the responsibility of the computing subject leader. The computing subject leader is also responsible for supporting colleagues in the teaching of computing, for keeping informed about current developments in the subject and for providing a strategic lead and direction for the subject in the school. The computing subject leader will give the Headteacher a regular summary in which they evaluate the strengths and weaknesses in the subject and indicates areas for further improvement.

The computing lead will aim to secure:

- High quality teaching of computing;
- Effective use of resources;
- Improved standards of learning and achievement for all pupils

The current computing lead is **Mr Matthew Stanley.**

Effective computing leadership will result in:

Pupils who:

- Show sustained improvement in their subject knowledge, understanding and skills in relation to prior attainment;
- Understand the key ideas in computing at a level appropriate to their age and stage of development;
- Show improvement in their computing skills;
- Know the purpose and sequence of activities;
- Are well prepared for any tests and examinations in the subject;
- Are enthusiastic about computing and highly motivated to continue with their studies;

- Through their attitudes and behaviour, contribute to the maintenance of a purposeful working environment

Teachers who:

- Work well together as a team;
- Support the aims of the subject and understand how they relate to the school's aims;
- Are involved in the formation of policies and plans and apply them consistently in the classroom;
- Are dedicated to improving standards of teaching and learning;
- Have an enthusiasm for computing which reinforces the motivation of pupils;
- Have high expectations for pupils and set realistic but challenging targets based on a good knowledge of their pupils and the progression of concepts in the subject;
- Make good use of guidance, training and support to enhance their knowledge and understanding of computing and to develop expertise in their teaching;
- Take account of relevant research and inspection findings;
- Make effective use of subject-specific resources;
- Select appropriate teaching and learning approaches to meet subject-specific learning objectives and the needs of pupils

Parents who:

- Are well informed about their child's achievements in computing and about targets for further improvement;
- Know the expectations made of their child in learning the subject;
- Know how they can support or assist their child's learning in the subject

Headteachers and other senior managers who:

- Understand the needs of the subject;
- Use information about achievements and development priorities in the subject in order to make well informed decisions and to achieve greater improvements in the whole school's development and its aims

Other adults in the school and community, who:

- Are informed of subject achievements and priorities;
- Are able, where appropriate, to play an effective role in supporting the teaching and learning of computing

Any amendments to this policy will be reported to the Governing Body annually.