



BIDSTON AVENUE PRIMARY SCHOOL

COMPUTING SUBJECT POLICY September 2022

Approved by the Governing Body of Bidston Avenue Primary School

Autumn 2022

Signed: _____

Cllr George Davies (Chair of Governors)



Intent

Purpose

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. 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.

Aims

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

Supporting our Vision

'The computer was born to solve problems that did not exist before' Bill Gates

IT has become part of the way in which we work and entertain ourselves. We want our children to become confident users of IT, equipped to contribute to a world of rapid technological change.

At Bidston Avenue, children learn how IT can support them in their learning, and are encouraged to enthusiastically try out new technologies, apps and software. They will gain the transferable skills needed to adapt to ever-changing software, and devices, to prepare them for the technologies that they will encounter as they grow up and enter the world of work. Crucial to much of this is the ability to think logically, sequence and break ideas down into discrete steps, as recognised in the National Curriculum. These computer science skills are therefore a vital strand in our teaching.

Our children will know how to use technology safely and responsibly, who to talk to when they come across something that doesn't seem right, fair, acceptable or appropriate, and know when to turn off the technology to take a break (and why this is important). They will be taught to treat others with respect and understand that expectations about their online behaviour are the same as those in 'real life'.

The drivers that shape our curriculum



Reader

During Computing lessons, children begin to learn how to decode the online world by recognising common symbols and icons and develop an understanding of their meaning. They read online text, developing their skills of skimming, scanning and summarizing. Children develop their programming skills by reading through algorithms (in picture form at first, progressing eventually onto text-based programming language) and predicting what will happen when the algorithm runs. Children then begin to be able to identify errors in the code and debug them, in order for it to run as expected. As their programming skills improve, children begin to use block-based coding and eventually text-based, alongside the syntax needed for that.



Thinker

Children at Bidston Avenue develop their thinking skills through Computing lessons as they begin to appreciate how technology impacts on our everyday lives. They learn to design questions to investigate and refine search terms to help find what they are looking for. Children learn to evaluate different sources of information for accuracy and reliability. They predict what algorithms will do and work through the instructions/code to identify bugs if the algorithm doesn't work as expected. They learn to analyse data, look for a trend and predict what might happen next. Children develop their creativity as they develop and design, bearing in mind the cause and effect of the choices they make. They learn to approach a problem in different ways and design different solutions to problems.



Resilience

Resilience is a key skill in Computing and something that we all need when using technology. Problem-solving and debugging, in particular, are vital to becoming good programmers and so children learn to analyse code to find bugs. They develop solutions to problems and can adapt them or take a different approach to find a solution if what they are trying isn't working. Children develop resilience as part of their digital literacy work, learning to make positive contributions online and what to do if they have negative online experiences. The iterative design process allows children to build and design systems in small steps, so that any potential problems can be identified as the process unfolds and not become what seems to be an insurmountable problem later on.

Supporting our Values

In all we do, we promote the following values

- **Respect**
- Friendship
- Determination
- Excellence
- Courage
- Inspiration
- Equality

Opportunities for promoting acquisition of Cultural Capital

Children at Bidston Avenue use IT to explore cultural experiences that they may not ordinarily be able to do. They use applications and online sites to explore the world around us, from listening to an orchestra, to taking a journey through the Amazon rainforest. In Computing lessons, children develop their artistic skills as they create and edit online images. They compose sounds and combine different musical elements to create short pieces of music. They create 3D modelling tools to create and design objects and use our 3D printer to turn these into real life models. We aim to develop links with local organisations and people who can help to inspire our children and describe how the skills learnt in Computing can be used in the world of work.

RRSA

Article 16- You have the right to privacy.

Article 17- You have the right get information that is important to your well-being, from radio, newspaper, books, computers and other sources.

Article 35- Governments must protect children from sexual abuse and exploitation.



Implementation

Bidston Avenue Primary School delivers a world class curriculum. It is accessible, inspiring and ambitious, so that every child is equipped to make a positive contribution.

In ensuring high standards of teaching and learning in Computing, we implement a curriculum that is progressive throughout the whole school.

Planning for Computing is a process in which all teachers are involved to ensure that the school gives full coverage of, 'The National Curriculum programmes of study for Computing 2013'.

The learning journey has been planned to ensure full coverage and progression of the Computing Programme of Study is achieved. Teachers plan to suit children's interests, current events and technological developments to the world around us.

Planning

The Computing long-term plan maps the Computing topics that the children study in each term during each key stage. The Computing subject leader is responsible for continually developing the plan and considering online resources and new initiatives in Computing. The children often use technology to enhance their learning in other subject areas.

Our medium-term plans give details of each unit of work for each term. They identify the key learning objectives for each unit of work, links with the wider curriculum, online safety considerations and ideas to make the unit as inclusive as possible. The Computing subject leader is responsible for keeping and reviewing these plans.

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

Teaching and Learning

An objective of the teaching of Computing is to equip children with the technological skill to become independent learners. Consequently, the teaching style that we adopt is as active and practical as possible. While, at times, we do give children direct instruction on how to use hardware or software, the main emphasis of our teaching in Computing is for individuals or groups of children to use technology to help them to progress in whatever they are studying. So, for example, children might research a history topic by using role-play software that engages them in a highly visual way, or they might place themselves in a historical setting by manipulating a digital photograph, or they might investigate a particular issue on the Internet. They can also connect with other classes studying the same topic and exchange ideas with them.

We recognise that all classes have children with a wide range of Computing abilities. This is especially true when some children have access to IT 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:

- setting tasks which are open-ended and can have a variety of responses;
- setting tasks of increasing difficulty (not all children complete all tasks);
- sometimes grouping children by ability, and setting different tasks for each ability group;
- providing resources of different complexity that are matched to the ability of the child
- using classroom assistants to support the work of individual children or groups of children.
- Weekly after school homework club for Y6 gives children access to computers and enables them to complete homework with staff support.
- Teacher supervised lunchtime IT slots for Y2-6 to help children improve Computing skills, complete tasks and access a wide a variety of educational resources to further their learning.

Subject specific SEND Scaffolding

Rapid graspers are provided with further challenge to ensure mastery and will be able to attempt tasks that help to develop their computational thinking further.

Children with SEND are supported in lessons as activities are broken down into smaller chunks, reminders are displayed on the screens in the IT suite rooms. Models and examples are also displayed throughout the lesson for children to refer to. Login cards are also available for the various sites we use. Success criteria are used to focus children on what should be included in their work.

Assistive technology and translation sites are available for children who need help reading or have English as an additional language and need instructions translated.

Links to other subjects/curriculum areas:

Digital literacy skills are used across the curriculum to research and present ideas and information.

Search the internet for relevant information; using increasing understanding of keywords and search tools.

Maths skills used in computer science strand to help with movement along axis, coordinates, internal and external angles of vertices, etc.

Apps and online sites are used to develop knowledge and skills in other curriculum areas (Sumdog, TTRockStars and subject-specific apps such as the Water Cycle etc).

Aspects of online safety have strong **PSHE** links and our 1Decision programme includes online safety lessons that are based around videos of real-life scenarios for teachers to explore with their class.

Experiences every child should have:

- Use unplugged activities to develop computational thinking (throughout school).
- Learn how to use different devices, including computers and tablets, to access websites and applications.
- Create algorithms to make something happen- both onscreen and in real life.
- Use devices for physical computing such as Beebots, Micro:bits, Crumbles etc.
- Create and edit images and video (including using green screening) using different devices.
- Design and produce a 3D model using the 3D printer.

Organisation

Foundation Stage

Skills taught across the Foundation Stage feed into the National Curriculum subject of Computing. For example, children explore how things work; show resilience and perseverance in the face of a challenge; develop their motor skills so that they can use a range of tools competently, safely and confidently; explore

and use a range of artistic effects to express their feelings; and follow rules, understanding why they are important.

Children will also recognise that a range of technology is used at school and in the wider world. They have opportunity to use the interactive televisions (to support other areas of learning), iPads and simple programmable toys.

Years 1-6

Computing is a foundation subject in the National Curriculum and so each year group timetables time for Computing to be taught each week. Most Computing lessons take place in our IT suite but other activities, such as unplugged activities, may be more suited to the classroom or an outdoor space. Children in Year 1 will use the IT suite regularly by the summer term, after learning how to log in and manipulate a mouse, in order to use the computers. Children in Years 2-6 visit the IT suite each week for their Computing lesson. Digital literacy skills and online safety are taught in other curriculum areas too.

During lessons, children may spend time working collaboratively with other children, but will have a computer to be able to complete any work they have been set.

Parent Partnership

Parents and carers are required to give signed authorisation before their child can use the Internet, either in guided or in independent schoolwork. Parents and carers are, however, assured that their child's use of the Internet at school is always supervised.

Login details for our online subscription sites are sent home with children in FS2 and additional copies may be sent home as children progress through school. Parents of children in FS2 have access to Tapestry, meaning they can follow their child's progress through the app. Parents of children in Y1-6 can use Seesaw to contact their child's teacher and share the work that is posted to the platform. Children and parents can also share moments from outside school with their child's teacher by posting work, images and videos to the platform.

Roles and Responsibilities

Subject Leader

- Write and update the Curriculum Policy for Computing
- Produce and monitor the long-term curriculum map to ensure coverage of the scheme of work for Computing
- Monitor and review medium term plans for Computing to ensure progression
- Aid colleagues with the planning and delivery of lessons when required
- Monitor and review standards of Computing teaching
- Review and order resources to enable the delivery of the Computing curriculum
- Deliver staff training for teaching Computing effectively
- Organise for CPD for particular staff/areas that are identified
- Prepare a weekly list of prioritised jobs for the IT technician to work through
- Promote the use of our online subscription sites and IT resources at assemblies and staff meetings
- Attend training to keep up to date with curriculum developments

Impact

Every child will leave as a **reader** who **thinks** critically and has the **resilience** for the world's challenges.

The impact and measure of this is to ensure children not only acquire the appropriate age-related knowledge linked to the Art and Design curriculum, but also skills which equip them to progress from their starting points, and within their everyday lives.

Assessment

Children's work is assessed by making informal judgements during Computing lessons. On completion of each Computing unit, the pieces of work produced that allow the children to demonstrate the skills learnt, is assessed and the outcomes are used to plan for future learning. In Y3-6 this work should be posted on Seesaw and include children's reflections on their learning and allow them to demonstrate their computational thinking, where appropriate. Verbal feedback is given to children during lessons, to help guide their progress. Written feedback should be added to children's work, recognising their effort. Children in Y1-2 will have work completed on Purple Mash marked with written comments or stars. Children may also provide constructive

feedback to each other (in the form of comments on Seesaw or Scratch, for example). This is used by the subject leader to monitor progression of each of the Computing strands from Year 1 to Year 6.

Monitoring and Review

The co-ordination and planning of the Computing curriculum are the responsibility of the subject leader, who also:

- supports colleagues in their teaching, by keeping informed about current developments in Computing and by providing a strategic lead and direction for this subject;
- gives the headteacher an annual summary report in which the strengths and weaknesses in Computing are evaluated and areas for further improvement indicated;
- uses specially allocated regular management time to review evidence of pupils' work.

Governor Approval and Review Dates

The policy is to be reviewed annually.