

Computing policy

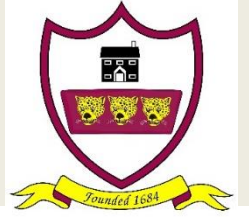
“Children at the heart. Transforming futures at the core.”

“Computational thinking provides insights into many areas of the curriculum, and influences work at the cutting edge of a wide range of disciplines. Why is computational thinking so important? It allows us to solve problems, design systems, and understand the power and limits of human and machine intelligence.” Computing at School

“You use skills you have learnt now for the future”

Year 6 pupil – December 2019

Aims of the Computing Curriculum



Tech team delivered Safer Internet day assembly
February 2023



KS2 Computing club
January -February 2022

We intend to deliver a rich, relevant and exciting Computing curriculum where children will become resilient learners who overcome barriers and understand their own strengths and areas for development.

Using a range of different types of technology in their Computing lessons will give them opportunities to explore their own creative development and computational skills over time.

More Able Learners in Computing

HOW LEARNERS ARE CHALLENGED

All children are challenged through quality first teaching within every Computing lesson. Children will be encouraged to ‘aim high’ and be the best they can be.

High expectations will nurture the higher order vocabulary and the most effective language structures.

Children will be exposed to a range of Computing resources and will be challenged through higher order questioning.

Groups of children are given additional challenges such as becoming part of our school’s Tech team and meet regularly to keep updated and add useful resources and ideas to our school website.

What we intend to do

At Brabin’s we intend to deliver an engaging Computing curriculum which will inspire the children to explore their own creative development.

Our curriculum demonstrates a progression of knowledge, skills and a secure understanding of online safety which supports pupils in developing computational skills confidently.

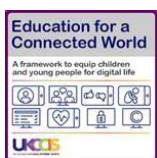
As a school we want children to enjoy and love learning about Computing by gaining knowledge and skills, not just through experiences through up to date resources and technology such as iPads, laptops and access resources like a green screen.

Our units of learning are developed with the national curriculum objectives for Computing, however they have been planned around the needs of our children, experiences and resources.

There are four aspects of our computing curriculum: computer science information technology, digital literacy and online safety.

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.



Online Safety

As a school we are using ideas from the Education for a connected world document in our whole school online safety plan.

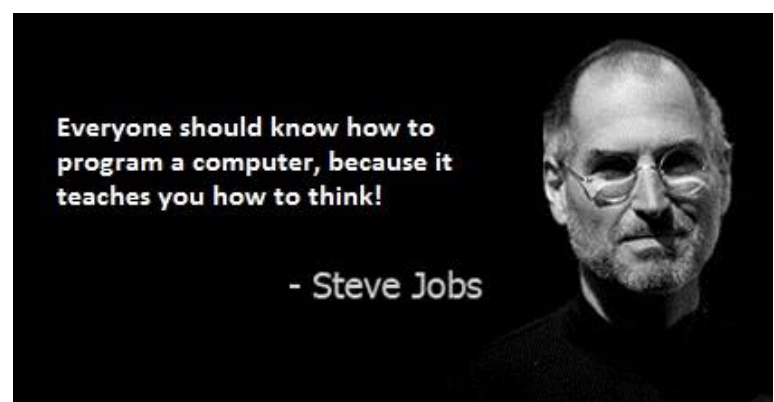
It enables the development of teaching and learning as well as guidance to support children and young people to live knowledgeably, responsibly and safely in a digital world. It focuses on 8 areas:

1. Self-image and Identity
2. Online relationships
3. Online reputation
4. Online bullying
5. Managing online information
6. Health, wellbeing and lifestyle
7. Privacy and security
8. Copyright and ownership.

On the Online Safety section of our school website we have CEOP button which provides access to trusted online safety advice.

Non-Negotiables in Computing

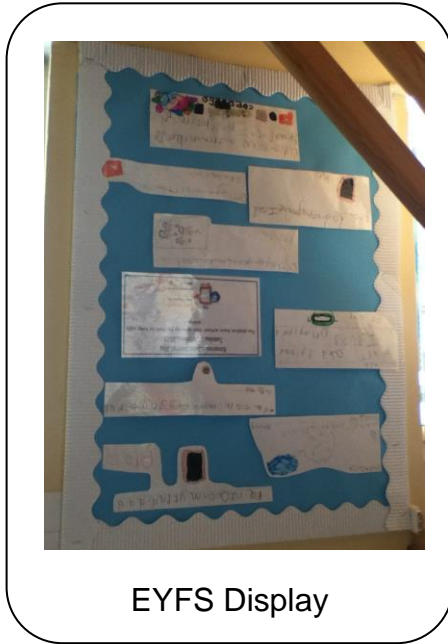
- Respecting our equipment and using it appropriately.
 - Follow school’s online safety policy.
 - Respect others views and opinions.



All children will access...

- ✓ Rich and broad curriculum developing a secure understanding of online safety.
- ✓ Up to date equipment and apps.
- ✓ iPads, laptops and iPods.
- ✓ Interactive smart board in their classroom.
- ✓ Family projects linked to Safer Internet day.
- ✓ Opportunities to be part of our school's Tech team.
- ✓ Opportunities at Open Evenings where children can show parents their learning.
- ✓ Enrichment opportunities.
- ✓ Extra-curricular clubs.

Extra-curricular clubs, access to different types of technology and Internet safety activities.



EYFS Display

Computing displays



Supporting Learners in Computing

Learning in Computing is carefully planned to include all learners. Learning may be differentiated by outcome, by support, by task or by resources. A range of interventions are also deployed to help close gaps or attend to individual needs. These may be delivered by the class teacher or teaching assistant within or outside the lesson.

Extra-curricular clubs



Extra-curricular clubs
January- February 2022



KS1 examples of work
Algorithms



Technology walk
in EYFS 2022

PARENTAL INVOLVEMENT

Parents are invited into school for events such as Open Evenings where children can show their parents examples of their computing work for example animation in EYFS, how to use a green screen in year 3 and 4. Each year, we have a family project linked Safer internet day. In 2023, the children designed their own online safety logo for our school, the winner of this project had their logo added to our school website and newsletter. In 2020, the children created their own Safer Internet logo, slogan and explained about their design. All the children's work was displayed in the hall along with some examples on our school website.

The winner of our log project 2023
By Alex and Rocco – Surf with Safety



Examples of Safer Internet day
family project
February 2023

The children designed our school online safety logo and explained about their design.



Implementation

What Computing will look like

The teaching of Computing has so many engaging opportunities. We use 'Teach Computing' scheme, developed by National Centre for Computing education, as a planning tool for computing lessons which have richly engaging lessons and high level vocabulary.

We use Seesaw, as a digital platform where pupils can share and evaluate their own work, as well as that of their peers. This allows teachers to assess the children's knowledge, understanding and informs their next step planning. Seesaw is also used a communication tool with parents, teachers send messages, homework and activities via this platform and all posts are approved, marked and feedback given.



Our curriculum delivers a balanced coverage of computer science, information technology, digital literacy and online safety. The children will experience of all four aspects in each year group, the subject knowledge will become more specific and in depth, with more complex skills being taught as the children progress through school, ensuring that learning there learning is built on and their confidence is developed.

The children have the opportunity to use different aspects of technology in a cross-curricular where appropriate, this approach motivates pupils and supports them to make connections and remember the steps they have been taught ensuring that there learning is continually built on in different ways. Children will be engaged and challenged by the curriculum which they are provided with to allow children to become resilient learners who overcome barriers and understand their own strengths and areas for development.

Computing Curriculum Overview 2 year cycle

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1 & 2 Cycle A	<u>Technology around us</u> Computing systems Algorithms	<u>Moving a robot</u> Programming Algorithms	<u>Programming animations</u> Programming Design/development	<u>Information technology around us</u> Networks Computing systems	<u>Algorithms</u> Algorithms Programming	<u>Programming quizzes</u> Programming Design/development
Year 1 & 2 Cycle B	<u>Digital painting</u> Effective use of tools Creating media	<u>Digital photography</u> Effective use of tools Creating media	<u>Grouping data</u> Data and information Algorithms	<u>Digital writing</u> Effective use of tools Creating media	<u>Pictograms</u> Effective use of tools Data and information	<u>Digital music</u> Design/development Creating media
Year 3 & 4 Cycle A	<u>Connecting computers</u> Networks Computing systems	<u>The internet</u> Networks Safety and security	<u>Sequencing sounds</u> Programming Design/development	<u>Events and actions in programs</u> Programming Design/development	<u>Branching databases</u> Data and information Effective use of tools	<u>Data logging</u> Computing systems Data and information
Year 3 & 4 Cycle B	<u>Stop frame animations</u> Effective use of tools Creating media	<u>Desktop publishing</u> Effective use of tools Creating media	<u>Audio production</u> Effective use of tools Creating media	<u>Repetition in shapes</u> Programming Algorithms	<u>Photo editing</u> Effective use of tools Creating media	<u>Repetition in games</u> Design/development Programming
Year 5 & 6 Cycle A	<u>Video production/editing</u> Creating media Design/development	<u>Flat file databases</u> Data and information Effective use of tools	<u>Vector drawing</u> Effective use of tools Creating media	<u>Selecting in physical computing (crumble)</u> Programming Computing systems	<u>Selection quizzes</u> Algorithms Programming	<u>3d modelling</u> Effective use of tools Creating media
Year 5 & 6 Cycle B	<u>Systems and searching</u> Computing systems Networks	<u>Communication and collaboration</u> Computing systems Networks	<u>Web creation</u> Creating media Design/development	<u>Spreadsheets</u> Effective use of tools Data and information	<u>Variable in games</u> Programming Design/development	<u>Sensing – micro bit</u> Programming Computing systems

Subject Organisation and Implementation at Brabin’s

Online Safety is embedded throughout the Computing Curriculum across both key stages and within all units covered. Other computing skills are also taught through a cross-curricular approach in topic lessons

At Brabin’s we implement a curriculum that is progressive throughout the whole school. Computing is taught as part of a half-termly unit, focusing on knowledge and skills stated in the National Curriculum. Units of work are carefully planned as a whole staff to ensure progression and a wide range of experiences can be accessed.

Our ipads and the laptops are distributed around the school and are used to support pupils when accessing the Computing curriculum and in other subject areas, along with a range of other resources such as programmable toys and a range of apps on the ipads.

Computing will be taught both as a discrete subject and there are cross-curricular links which supports and enhances subject knowledge when appropriate.

"The science of today is the technology of tomorrow."

Edward Teller

Professional Development in Computing

At Brabin's, we intend to keep the subject of Computing rigorous and alive so it is reflective of pedagogical research and is ambitious in its aims. To do this, we invest significantly in Continued Professional Development in Computing for all our staff. The subject leader and other staff members attend courses where this appropriate and this is fed back to ensure all staff members are up to date. Opportunities for professional engagement with cluster colleagues are highly valued, where appropriate, this can include class teachers taking part in moderation and training events. Training for staff is provided regularly, through our weekly staff meetings and a focus on a different subject each week to ensure each subject has a presence. As small team of teachers, close communication is a key strength and teachers regularly share good practice with one and other.

Examples of Spiritual, Moral, Social & Cultural Development in Computing

<u>Spiritual</u>	<u>Moral</u>	<u>Social</u>	<u>Cultural</u>
<p>Computing boosts the spiritual growth of our children through the deeper thinking skills needed to understand and create an algorithm, produce and improve a program and use a program effectively. Children consistently learn and use key life skills needed for the world in which they live.</p>	<p>The moral development of pupils is a thread running through the entire Computing curriculum because it relates to everyday life. They consider the moral decisions about copyright of pictures. All children learn how to keep themselves safe on-line (e-safety) and sign up to a Student Code of Conduct. In addition, they consider the implications of cyber bullying and appropriate actions to take.</p>	<p>Within Computing children use both creativity and problem solving as they create their programs. It is within the de-bugging process that these problem solving skills come to the forefront and the skill of teamwork plays a key part. Children actively engage in projects individually and within pairs or small groups. During these lessons, there are opportunities to both self and peer assess. This enables children to understand how well they are progressing and what actions they will need to take next in order to progress further.</p>	<p>Computing is a recognised key skill for the 21st century, recognizing and promoted across the globe. Children have rich opportunities to appreciate other cultures facilitated by on-line and web applications such as Google Earth.</p>

CULTURAL CAPITAL

In Computing we provide weekly, engaging lessons for the children in which we include a range of experiences to develop their skills in order to prepare them for the real world.



Lots of opportunities are provided to enable children to explore, experience and explain the wide variety of technology in the world in order for them to become thoughtful members of the digital community.

Opportunities include to be part of our school tech team, take part in online workshops and assemblies, use a range of technology to develop curiosity and enthusiasm.

DEVELOPING BRITISH VALUES WITHIN THE COMPUTING CURRICULUM

Children at Brabin's demonstrate the following values by:

- Listening to everyone's ideas in order to form a majority.
- Working as part of a team to use computing devices effectively.
 - Taking responsibility for our computing behaviours.
- Exercising rights and personal freedoms safely through knowledge of E-safety
Respect and Tolerance:
- Showing respect for other cultures when undertaking research using computing devices.

WELLBEING AND MENTAL HEALTH

At Brabin's, we recognise the research which shows how a whole school approach can promote wellbeing and positive mental health.

This Government report from 2018 states the importance for creating a whole school culture :The culture, ethos and environment of the school can have a profound influence on both pupil and staff mental wellbeing.

A whole school approach is one that goes beyond the teaching in the classroom to pervade all aspects of school life, including:

- partnerships with families and the community: proactive engagement with families, outside agencies, and the wider community to promote consistent support for children's health and wellbeing.
- teaching: using the curriculum to develop pupils' knowledge about health and wellbeing.
- culture, ethos and environment: the health and wellbeing of pupils and staff is promoted through the 'hidden' or 'informal' curriculum, including leadership practice, the school's policies, values and attitudes, together with the social and physical environment;

<https://www.gov.uk/government/publications/mental-health-and-behaviour-in-schools--2> document

COMPUTING IN THE EARLY YEARS

We teach computing in the Reception class as an integral part of the topic work covered during the year and children access resources in the continuous provision. The children have the opportunity to use the computers, digital cameras and controllable toys such as beebots. Children have access to iPads and iPods we are used in the continuous provision providing children with access to making their own videos, using animation and updated apps supporting all areas of the curriculum.

Using the new EYFS framework 2021 these are the key skills they will learn through the use of technology – explore how things work, show resilience and perseverance in the face of a challenge, know and talk about the different factors that support their overall health and wellbeing: -sensible amounts of 'screen time' and be confident to try new activities using a range of resources. Children will be taught half termly units of Online Safety using the Education for a Connected World, Expressive Arts and Design, PSED, Physical Development and understanding the world are four of the seven key areas of learning and development in the Early Years Foundation Stage (EYFS). Development Matters (2020) identifies the following skills:

PSED – ELG – Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. Explain reasons for rule, know right from wrong and try to behave accordingly.

Expressive arts and design – ELG – Safely use and explore variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

ASSESSMENT

All children are encouraged to be involved in the process of learning. In lessons, across the school, teachers will strive to provide instant oral feedback.

Children will add learning they are proud of to their Learning Tapestries during the year. They will take this home when they leave school.

Pupil progress data is shared with the Subject Leader on a half termly basis. More formal assessments, Pupil Progress meetings and moderation take place each term.

In the EYFS, formative assessments are carried out on a daily basis. This type of assessment informs planning, the children's next steps and demonstrates progress. Summative assessments are completed at the end of each phonic phase, this provides a good understanding of what the children have learnt and any areas that need to be reinforced.

MONITORING

Monitoring is undertaken by the Headteacher/Subject Leader. This is conducted regularly and includes: -

- Monitoring of planning
- Assessment using See saw
- Learning Environment Walkthroughs
- Pupil voice
- Data analysis
- Lesson Observation

Information will be shared with all governors through the Curriculum Committee, the Headteacher Report to Governors.

IMPACT

Our approach to the curriculum results in a fun, engaging, and high-quality computing education. As children have become more confident in their abilities in Computing, they will be more independent and key life skills such as problem-solving, logical thinking and self-evaluation become second nature. Children will be equipped, not only with the skills and knowledge to use technology effectively and for their own benefit, but more importantly – safely. They will understand the consequences of using the internet and that they are also aware of how to keep themselves safe online. When leaving Brabin's the children will have a secure subject-specific knowledge developed from our computing lessons which provide children with the experiences which will benefit them in secondary school, further education and future workplaces.