

Swalwell Computing Policy



Academic year	Head teacher	Assistant Heads	Chair of Governors
2021/2022	Mrs R Hocking	Mrs S Leaver & Mrs K McCall	Mrs L Gray

Review Date	Changes made	By whom	Date Shared
March 2020	Yes	AHT KM	March 2020

1. Curriculum Statement

Intent

In line with the 2014 National Curriculum for Computing, our aim is to provide a high-quality computing education which equips children to use computational thinking and creativity to understand and change the world. The curriculum will teach children key knowledge about how computers and computer systems work, and how they are designed and programmed. Learners will have the opportunity to gain an understanding of computational systems of all kinds, whether or not they include computers.

By the time they leave Swalwell Primary, children will have gained key knowledge and skills in the three main areas of the computing curriculum: computer science (programming and understanding how digital systems work); information technology (using computer systems to store, retrieve and send information); and digital literacy (evaluating digital content and using technology safely and respectfully). The objectives within each strand support the development of learning across the key stages, ensuring a solid grounding for future learning and beyond.

Implementation

At Swalwell Primary, computing is taught using a blocked curriculum approach. This ensures children are able to develop depth in their knowledge and skills over the duration of each of their computing topics. Teachers use the medium-term plans as a starting point for the planning of their computing lessons, which are often richly linked to engaging contexts in other subjects and topics. We have a computing suite, shared laptops and sets of iPads to ensure that all year groups have the opportunity to use a range of devices and programs for many purposes across the wider curriculum, as well as in discrete computing lessons. Employing cross-curricular links motivates pupils and supports them to make connections and remember the steps they have been taught. The implementation of the curriculum also ensures a balanced coverage of computer science, information technology and digital literacy. The children will have experiences of all three strands in each year group, but the subject knowledge imparted becomes increasingly specific and in depth, with more complex skills being taught, thus ensuring that learning is built upon. For example, children in Key Stage 1 learn what algorithms are, which leads them to the design stage of programming in Key Stage 2, where they design, write and debug programs, explaining the thinking behind their algorithms.

Impact

Our approach to the curriculum results in a fun, engaging, and high-quality computing education. The quality of children's learning can be seen within their own network folders as well as in the class floorbooks. Evidence such as this is used to feed into teachers' future planning, and as a topic-based approach continues to be developed, teachers are able to revisit misconceptions and knowledge gaps in computing when teaching other curriculum areas. This supports varied paces of learning and ensures all pupils make good progress.

Much of the subject-specific knowledge developed in our computing lessons equip pupils with experiences which will benefit them in secondary school, further education and future workplaces. From research methods, use of presentation and creative tools and critical thinking, computing at Swalwell Primary gives children the building blocks that enable them to pursue a wide range of interests and vocations in the next stage of their lives.

2. Rationale

The Computing in the National Curriculum (2013) expectations split the teaching and learning of Computing into three strands (Computer Science, Digital Literacy and Information Technology). It is therefore important that children recognise the difference between what makes each one relevant to their future, as well as their everyday lives. High quality teaching of Computing, from Reception through to Year 6, utilises a combination of practical lessons and theory lessons designed to promote discussion and nurture understanding, which are also relevant to other areas of the curriculum such as PSHE and Citizenship.

This policy reflects the values and philosophy in relation to the teaching and learning of and with ICT. It sets out a framework within which teaching and non-teaching staff can operate and give guidance on planning, teaching and assessment. This policy should be read in conjunction with the scheme of learning for Computing that sets out in detail what children in different year groups will be taught and how ICT can facilitate or enhance learning in other curriculum areas.

This document is intended for:

- All teaching staff
- All staff with classroom responsibilities
- School governors
- Parents
- Inspection Teams

3. Aims

Computer Science

- To enable children to become confident coders on a range of devices.
- To create opportunities for collaborative and independent learning.
- To develop children's understanding of technology and how it is constantly evolving.

Digital Literacy

- To enable a safe computing environment through appropriate computing behaviours.
- To allow children to explore a range of digital devices.
- To promote pupils' spiritual, moral, social and cultural development.

Information Technology

- To develop ICT as a cross-curricular tool for learning and progression.
- To promote learning through the development of thinking skills.
- To enable children to understand and appreciate their place in the modern world.

4. Objectives

In order to develop the Computing and ICT capability and understanding of each child we will provide through our planning:

- Computing through all three strands taught within the classroom.
- Continuity throughout the school to ensure that experience and skills are developed in a cohesive and consistent way.
- Access to computers, netbooks and ipads within class or in designated communal areas.
- Experience of a variety of well-planned, structured and progressive activities.
- Experience cross-curricular links to widen children's knowledge of the capability of computing including safe use of the Internet and other digital equipment.

- Opportunities for children to recognize the value of computing and ICT in their everyday lives and their future working life as active participants in a digital world.

5. Roles and Responsibilities

The head teacher, in consultation with the ICT leader and staff will:

- Determine the ways in which Computing and ICT supports, enriches and extends the curriculum.
- Decide on the provision and allocation of resources.
- Ensure that Computing and ICT is used in a way that achieves the aims and objectives of the school.

There is a designated Computing leader to oversee the planning and delivery of Computing and ICT within the school through:

- Facilitating the use of ICT across the curriculum in collaboration with all subject leaders.
- Providing or organizing training to keep staff skills and knowledge up to date.
- Advising colleagues about effective teaching strategies, managing equipment and purchasing resources.
- Monitoring the delivery of the Computing and ICT curriculum and reporting to the head teacher and governors.

The Computing and ICT team work in partnership with the subject leader to ensure all National Curriculum statutory requirements are being met with regard to the use of ICT within curriculum subjects.

Whole school coordination and support is essential to the development of Computing and ICT capability however, it is the responsibility of each individual teacher to plan and teach appropriate Computing and ICT activities and assist the leader in the monitoring and recording of pupil progress in the subjects.

6. Teaching and Learning

Our Scheme of Learning is based on the National Curriculum guidelines.

Individual laptops and iPads in classrooms support the development of Computing and ICT capability by enabling independent learning; encouraging research, and allowing for the creative use of ICT in all subjects. Digital projectors, interactive whiteboards and visualisers are positioned in all classrooms and are used as a teaching and learning resource across the curriculum. An immersive classroom further enhances the children's learning, emotive and language experiences and responses through cross-curricular exploration of ideas and themes.

Our school website showcases some of the wealth of experiences that the children are involved in as well as providing help and supportive information for the school community.

6.1 EYFS

In EYFS children will have access to a wide range of technology to support their journey to reaching the Early Learning Goals. Equipment will include laptops, programmable toys and recording devices. It is important in the Foundation Stage to give children a broad, play-based experience of Computing in a range of contexts, including outdoor play. Computing is not just about computers

but encompasses a wide range of technologies and resources including calculators, CD-players, controllable robots and toys and interactive whiteboards.

Early years learning environments should feature Computing scenarios based on experience in the real world, such as in role play. Children gain confidence, control and language skills through opportunities to explore such as 'programming' each other using directional language to find toys/objects, creating artwork using digital drawing tools and controlling programmable toys.

Outdoor exploration is an important aspect and using digital recording devices such as video recorders, cameras and microphones can support children in developing communication skills. This is particularly beneficial for children who have English as an additional language.

6.2 Key Stage 1

Key stage 1 pupils should be taught 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.

6.3 Key Stage 2

Key stage 2 pupils should be taught 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.

Across Key Stage 1 and Key Stage 2, our children will use technology to:

- Learn Programming by using programmable toys, program on screen, through animation, develop games (simple and interactive) and to develop simple mobile apps.
- Develop their computational thinking through filming, exploring how computer games work, finding and correcting bugs in programs, creating interactive toys, cracking codes and developing project management skills.
- Develop computing creativity by illustrating an eBook, taking and editing digital images, shooting and editing videos, producing digital music, creating geometrical art and creating video and web copy for mobile phone apps.
- Investigate computer networks through finding images using the Web, researching a topic, finding out how the school network operates, editing and writing code, creating an e-safety micro-site, and planning the creation of mobile apps.
- Communicate and collaborate by producing a talking book, communicating clues, use email, produce wikis, create and write blog pages and design interfaces for apps.
- Understand the need for productivity as a life skill through creating a card electronically, record bug hunt data, create surveys and analyse results, record and analyse weather data, create virtual spaces and research the app market.

Teacher's planning is differentiated to meet the range of needs in each class. A wide range of teaching and learning styles are employed to ensure all children are sufficiently challenged. Children may be required to work individually, in pairs or in small groups according to the nature of the task. Different outcomes may be expected depending on the ability and needs of the individual child.

7. Assessment

We assess the children's work in computing by making informal judgments as we observe the children during lessons. Once the children complete a unit of work, we make a summary judgment of the work for each pupil as to whether they have yet to obtain, obtained or exceeded the expectations of the unit.

Records are kept in the form of teacher evaluations, saved work in the Student's folder. Each class across Year groups 1-6 also have floor books containing pupils' work. A range of abilities are usually targeted and every pupil in the school. Teacher assessments, including the end of year level achieved, are reported to parents in the annual reports, and assessments are passed on to the next class teacher. Pupils are actively encouraged to use online programs to support their English and Maths skills.

7.1 Formative Assessment:

Self-assessment

In line with the National Curriculum, children are taught to debug their own programs, use logical reasoning to explain simple algorithms (including their own), and detect and correct errors in both algorithms and programs.

Peer-assessment

The ideas of self-assessment suggested above translate naturally into peer assessment, with pupils working with a partner to review, and help correct, algorithms and programs, or provide critical, constructive feedback on digital content.

Open questioning

Pupils' knowledge of the concepts covered by the programme of study may not be immediately apparent in the work they produce. The use of open questioning is one way in which you can both assess and develop their grasp of concepts.

Discussion with peers

Encouraging pupils to use similar open questions can be effective in allowing them to focus on what they've learned, rather than only on what they've done. Moving some of this discussion online, and perhaps involving pupils in other schools or countries, would be one powerful way to illustrate the opportunities offered by computer networks for communication and collaboration.

7.2 Summative Assessment:

Summative assessment should review pupils' ability and provide a best fit 'level'. Independent tasks provide a number of opportunities and scope for pupils to demonstrate their capability throughout the term. There will be opportunities for pupil review and identification of next steps. Summative assessment should be recorded for all pupils showing whether the pupils have met, exceeded or not achieved the learning objectives.

8. Resources

To enable regular and whole class teaching of Computing and ICT, each teacher has access to a shared bank of laptops and iPads.

Each member of teaching staff has a laptop computer and iPad, which they are able to use at home. Every class has an interactive touch-screen board linked to a main computer on the school network. The school hall has a ceiling mounted projector and a screen, which is also linked to the school network.

There is also a computer suite available for computing lessons and cross-curricular learning.

9. Equal Opportunities

It is our policy to ensure that all children, regardless of race, class or gender, should have the opportunity to develop computing and ICT capability. We aim to respond to children needs and overcome potential barriers for individuals and groups of children by:

- Ensuring that all children follow the scheme of learning for Computing.
- Providing curriculum materials and programmes, which are in no way class, gender or racially prejudice or biased.
- Providing opportunities for our children who do not have access at home to use the school computers/Internet to develop independent learning.
- Providing suitable challenges for more able children, as well as support for those who have emerging needs.
- Responding to the diversity of children's social, cultural and ethnographical backgrounds.
- Overcoming barriers to learning through the use of assessment and additional support.

- Communication or language difficulties by developing computing skills through the use of all their individual senses and strengths.
- Movement or physical difficulties by developing computing skills through utilising their individual strengths.
- Behavioural or emotional difficulties (including stress and trauma) by developing the understanding and management of their own learning behaviours.

10. Inclusion

Work in Computing is frequently group or paired work using the computers in the Computing Suite, laptops/iPads within the classroom or a more practical activity using the Beebots or iPads. Independent activities should take place at available points for assessment purposes.

At Swalwell Primary, all children have the right to access the computing curriculum. In order to ensure that children with special educational needs achieve to the best of their ability, it may be necessary to adapt the delivery of the computing curriculum for some pupils. We teach computing to all children, whatever their ability. Computing forms part of the national curriculum to provide a broad and balanced education for all children. Through the teaching of computing we provide learning opportunities that enable all pupils to make progress. We do this by setting suitable learning challenges and responding to each child's different needs. Where appropriate, computing can be used to support SEN children on a one to one basis where children receive additional support. Additionally, as part of our approach to teaching and learning, we will use new technologies, accessibility features and adapted resources wherever possible such as change font size, speech recognition, different coloured backgrounds and screen printouts.

11. Internet Safety

Internet access is planned to enrich and extend learning activities across the curriculum. However, we have acknowledged the need to ensure that all pupils are responsible and safe users of the Internet and other communication technologies both in school and outside. An Internet Access policy has been drawn up to protect all parties (appendix A) and rules for responsible Internet use are displayed next to each computer and in each classroom within our school. To further ensure the safety of the children we will teach each class the rights and responsibilities of using the Internet. A link on the school website homepage gives parents more information on e-Safety.

12. Health and Safety

The school takes very seriously and is aware of the health and safety issues surrounding children's use of ICT. We ensure that pupils have a safe environment in which to learn. We ensure effective filters are in place to safeguard pupils. As such, we will ensure that:

- All fixed and portable appliance in school are tested by a LA approved contractor every twelve months.
- Damaged equipment is reported to the school business manager who will arrange for repair or disposal.
- Online safety is discretely taught each term by class teachers, through assemblies and through parent presentations annually. There is also a link on our school website to direct parents to further information on how to keep children safe online.
- Children learn about rights and responsibilities when using the Internet.
- To avoid continuous focus on the screen, teachers' model at regular intervals.

- Staff and pupils should avoid standing directly in front of the whiteboard projector. The projector beam should not be looked at directly.

13. Security, Legislation, Copyright and Data Protection

We ensure that the school community is kept safe by ensuring that:

- The school ICT technician is responsible for regularly updating anti-virus software.
- The use of ICT and computing will be in line with the school's Acceptable Use Policy (AUP).
- All staff, volunteers and children must sign a copy of the schools AUP.
- Parents are made aware of the AUP at annually, at the beginning of the school year or on entry to the school.
- All children are aware of the school rules for responsible use on login to the school network and will understand the consequence of any misuse.
- Reminders for safe and responsible use of ICT and computing and the Internet will be displayed in all areas.
- Software/apps installed onto the school network server must have been vetted by the teacher for suitable educational content before being purchased and installed. No personal software is to be loaded onto school computers. Further information can be found in the school's Data Protection policy.

Swalwell Primary has a responsibility to teach and uphold the laws and guidance on copyright. Images on the Internet are not freely available and we have a responsibility to teach children how to check and use information and images appropriately.

14. Monitoring

Monitoring termly enables the subject leader to gain an overview of Computing and ICT teaching and learning throughout the school. This will assist the school in the self-evaluation process identifying areas of strength as well as those for development. In monitoring the quality of Computing and ICT teaching and learning, the subject leader will:

- Observe teaching and learning in the classroom.
- Hold discussions with teachers and children.
- Analyse children's work
- Examine plans to ensure full coverage of the Computing and cross-curricular ICT requirements

15. Related policies and procedures

This policy statement should be read alongside our organisational policies and procedures, including:

- Acceptable Use
- Online Safety
- Child protection
- Procedures for responding to concerns about a child or young person's wellbeing
- Dealing with allegations of abuse made against a child or young person
- Managing allegations against staff and volunteers
- Code of conduct for staff and volunteers

- Anti-bullying policy and procedures
- Photography and image sharing guidance

Appendices

