Egglescliffe C.E. Primary School

Computing Policy

This policy was reviewed: June 2022
The date of the next review: June 2024

<u>**Computing Curriculum Intent**</u>

At Egglescliffe Primary School, our high-quality computing curriculum will allow our pupils to develop into independent and confident learners who are able to use their wide range of computational skills to understand and participate in an increasingly digital world.

Our balanced coverage of computer science, information technology and digital literacy will provide opportunities for children to investigate, question and explore new technologies and applications on their journey to becoming creative planners, problem solvers and critical thinkers. It will excite, inspire and awaken them to the important role of computers in their daily lives, and also to the far-reaching possibilities of computing in the wider world as a force for positive change.

Computing at Egglescliffe will enable our children to confidently walk into their future as digital citizens in a world which is shaped by ever-evolving technology.

1.) Legal Framework
This policy has due regard to all relevant legislation and statutory guidance including, but not limited to, the following:
- DfE (2013) 'Computing Programmes of Study: key stages 1 and 2'
- DfE (2017) 'Statutory Framework for the Early Years Foundation Stage'
- Equality Act (2010)
- The Data Protection Act (2018)

This policy operates in conjunction with the following school policies:
- Accessibility to School Policy
- Assessment Policy
- GDPR Data Protection Policy
- Health and Safety Policy
- Loaning School Equipment Policy
- SEND Policy

2.) What is Computing?
"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."

(*National Curriculum, 2013*)

The aims for Computing are to:
- develop a capability in finding, selecting, manipulating and evaluating information
- use electronic devices for effective and appropriate communication
- use computing and digital literacy skills to enhance learning throughout the curriculum
- understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- apply hardware and software to creative and appropriate uses of information

- 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
- create responsible, competent, confident and creative users of information and communication technology now and for future use
- explore attitudes towards computing and its value to pupils and society in general, for example to learn about issues of security, confidentiality and accuracy.

3.) National Curriculum Subject Content:

EYFS:
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. Early years learning environments should feature computing scenarios based on experience in the real world;, such as role play. Children gain confidence, control and language skills through opportunities to explore using non-computer based resources such as bee-bots. Children should have access to IT equipment, allowing them to explore the equipment and manipulate software. This can be in a focussed task or in a play task.

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

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.

4.) Planning and the Curriculum

At Egglescliffe C.E. Primary School, we adapt the National Curriculum to meet the needs of our school and our class. Computing is taught as a subject in its own right, both as a discrete lesson and embedded across other subjects with children applying skills and knowledge they have learnt to enhance the curriculum.

Our Computing Curriculum is designed to empower children to become independent learners and equipping children with the relevant skills for the key areas of computing, including: coding, e-safety, word processing, data handling, use of the internet, digital media, hardware and networks.

As a school we have recently invested in the support toolkit and schemes of work provided by Kapow Primary Computing which supports teachers with planning, teaching and CPD. Class teachers are responsible for using the toolkit and support on Kapow Primary to develop plans and ensure coverage across the whole school curriculum.

Our long-term plan maps out the units and focus taught in each term during the year. Activities in computing build upon the prior learning of the pupils and introduces new concepts. Whilst we give pupils of all abilities opportunity to develop their skills, knowledge and understanding, we also ensure there is increasing challenge for the pupils as they move up the school.

Our medium-term plans give details of each unit of work for each term. These plans define what is taught and ensure an appropriate balance and distribution of work across each term. They include key vocabulary for the unit as well as suggested equipment, resources and recommended assessment opportunities.

5.) Cross-curricular links

The teaching of computing contributes to teaching and learning in all curriculum areas. It also offers ways of impacting on learning which are not possible with conventional methods. Teachers use software to present information visually, dynamically and interactively, so that children understand concepts more quickly. For example, digital media links in closely with work in art, and work using databases supports work in mathematics, while role-play simulations and the Internet prove very useful for research in humanities subjects. Computing allows teachers and pupils to explore and immerse themselves in real life and historical scenarios from their classroom, including the use of virtual reality to go back in time to the Great Fire of London or to explore the Amazon rainforest. ICT skills enable children to complete research and present their information in the most appropriate way. Much of the equipment and software we use is generic and can therefore be used in several curriculum areas.

6.) Teaching and Learning

At our school, we teach computing to all children, whatever their ability and individual needs. Computing forms part of our School Curriculum Policy to provide a broad and balanced education for all children. We provide learning opportunities that enable all pupils to make good progress. In some instances, the use of technology has a considerable impact on the quality of work that children produce; it increases their confidence and motivation. When planning work in computing, we take into account the targets of pupils with SEND and we explore how computing can be used to support and challenge these children. The use of technology can help children in achieving their targets and progressing in their learning.

In computing, teachers use a variety of teaching learning styles that include the use of devices and also without. The main aim of the lessons are to develop pupils' knowledge, skills and understanding. The school uses a mixture of whole-class teaching, group work and individual activities. Pupils are given the opportunity to work on their own and collaborate with others, listening to their peers' ideas and treating these with respect.

Across school there is a class set of iPads and a class set of laptops. Pupils have access to these for lessons and their work is recorded, saved and shared in different ways. Children can save their responses and completed work on the school shared drive and digital storage drive. Pupils have access to a range of

software and apps that are used across the curriculum, including the internet, word processing and coding apps.

7.) Assessment and Reporting

Effective teachers employ a range of assessment strategies in order to monitor pupils' progress and attainment. Questioning is used to probe and extend understanding. Supportive and constructive feedback is provided to all pupils. Assessment is used as a diagnostic tool, which informs future learning. Pupils should be supported in assessing their own work and in identifying targets for improvement.

Characteristics of effective assessment practice include:
- Questioning is used throughout the lesson in order to judge pupil understanding;
- Mistakes and misconceptions are used constructively to facilitate learning; and
- Pupils are encouraged, through verbal target setting, to improve progress and attainment.

As in all other areas of the curriculum, assessment is an integral part of the teaching process. The school's digital storage areas are a valuable tool to allow assessment of progress and attainment. We assess the pupil's completed work in computing whilst observing them work during lessons. Pupils constantly make judgements and evaluate their work as the need to make modifications arises. Pupils are encouraged to assess their own achievements and those of others in a positive way.

Formative assessment is used to guide the progress of individual pupils in Computing. It involves identifying each pupil's progress in each aspect of the computing curriculum, determining what has been learned and what should therefore be the next step. At the end of each unit, the teacher tracks progress against age related statements of attainment. This data is entered using the terms Emerging, Expected and Deeper Understanding for a particular year group. The teacher and Subject Leader use this information to decide where a child's progress differs markedly from that of the rest of the class enabling future work to be planned for the child. The teacher also makes termly assessments to parents at Parent Consultation Evenings and an annual assessment of progress, as part of the annual report to parents.

8.) Equal opportunities

Egglescliffe C.E. Primary School is an inclusive school that ensures all pupils are provided with equal learning opportunities, regardless of social class, gender, culture, race, disability or learning difficulties.

In order to ensure pupils with SEND achieve to the best of their ability, outcomes are adapted, and the delivery of the computing curriculum is differentiated for these pupils, in line with the SEND Policy.

The planning and organising of teaching strategies for computing will be reviewed on a termly basis by the subject leader to ensure that no pupil is at a disadvantage. The school aims to maximise the use and benefits of computing as one of many resources to enable all pupils to achieve their full potential.

We recognise that we have pupils of differing abilities in our classes and provide suitable learning opportunities for all pupils by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies:

- setting common tasks that are open-ended and can have a variety of responses;
- setting tasks of increasing difficulty where not all pupils complete all tasks;
- grouping pupils by ability and setting different tasks for each group;
- providing a range of challenges with resources to support;
- using additional adults to support the work of individual pupils or small groups.

We enable pupils to have access to the full range of activities involved in learning about computing. Where pupils are to participate in activities outside the classroom, for example a school trip, we carry out a risk assessment prior to the activity, to ensure the activity is safe and appropriate for all pupils.

Where progress falls significantly below the expected range, we look at a range of factors – classroom organisation, teaching materials, teaching style, differentiation, so that we can take some additional or different action to enable the child to fully access the computing curriculum. Where a child's progress exceeds the expected range, appropriate extension work may be planned, where necessary, to allow pupils to learn more effectively.

9.) Monitoring and Review
The monitoring of standards of work and of the quality of teaching in computing is the responsibility of the Computing Subject Leader. The subject leader will monitor the progress and levels of attainment of the pupils. Self-review will include:
- the scrutiny of planning and completed work, to monitor progression and the teaching of core skills, ensuring assessment is used to guide planning
- analyse assessment information to evaluate the strengths and weaknesses in the subject, to indicate areas for further development and inform the Computing Action Plan
- informal lesson observations
- team teaching
- pupil voice

10.) The Role of the Subject Leader
- Preparing policy documents, curriculum plans and schemes of work for computing.
- Auditing IT equipment and ensuring equipment and software is up to date.
- Reviewing changes to the National Curriculum and advising teachers on the implementation of these.
- Monitoring the learning and teaching of computing, providing support for staff where necessary.
- Ensuring the continuity and progression from year group to year group.
- Helping to develop colleagues' expertise in computing.
- Liaising with teachers across all phases.
- Liaising with the SENCO about support for pupils with SEND.
- Liaising with external providers (including OneIT).
- Communicating developments in the teaching of computing to all teaching staff and the SLT as appropriate.
- Leading staff meetings and providing staff members with the appropriate training.
- Organising, providing and monitoring CPD opportunities in computing.
- Ensuring common standards are met for recording and assessing pupil performance.
- Advising on the contribution of computing to other curriculum areas, including cross-curricular links and extra-curricular activities.
- Collating assessment data and setting new priorities for the development of computing in subsequent years.

11.) The Role of the Teacher
- Acting in accordance with this policy.
- Ensuring the progression of pupils' computing skills, with due regard to the long-term plan and the national curriculum.
- Planning lessons effectively, ensuring a range of teaching methods are used to cover the content of the national curriculum.
- Adapting the scheme of work to meet the needs of the pupil's being taught.
- Sharing and promoting pupils' work in a way that embeds pride and a purpose.
- Liaising with the subject leader about key topics, resources and support for individual pupils.
- Monitoring the progress of the pupils in their class and reporting this to parents on an annual basis and the subject lead on a termly basis.
- Reporting any concerns regarding the teaching of the subjects to the subject leader or a member of the SLT.
- Undertaking any CPD that is necessary to effectively teach computing.
- Maintaining the resources, through the designation of digital leaders, required to deliver lessons.
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12.) Health and safety
Pupils have full access to a range of devices and the internet, to maximise their learning experience; however, health and safety concerns are inherent with this subject, including the use of equipment.

The risks of each task and the equipment required, will be assessed by the classroom teacher and subject leader before lessons. Pupils will be taught to use equipment properly by the classroom teacher before use. Any equipment that is damaged or may cause harm will be locked in the hall cupboard when not in use and flagged with OneIT.

13.) Resources
At present, each classroom contains at least one pc for teachers to use as a teaching and learning tool. The school does not use an ICT suite as computing is not a static based skill. Every computer and tablet in the school is linked to the internet and use 'smoothwall' to block inappropriate searches and content. Equipment and media within classrooms should be organised and accessible. Pupils are taught how to care for resources and surroundings.

Along with computers, the school currently has the following ICT equipment:
- 31 student iPads
- 40 laptops
- Networked colour printer
- Laptop and iPad charger trolleys
- Webcam per classroom

14.) Monitoring and review
The Subject Lead will review this policy every two years. Any changes made to this policy will be communicated to all members of staff.

The next scheduled review date for this policy is **June 2024**