

Computing Subject Policy

Policy Monitoring, Evaluation and Review

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Revision History:

Version	Date	Author	Summary of Changes:
1.0	January 2024	Kerry Carmichael	Initial policy written

At Fosse Mead our vision and objective of teaching Computing is to equip children with the technological skills to become independent, creative learners and to develop the skills required for the jobs of the future in a global world. The teaching style that we adopt is as active and practical as possible.

The National Curriculum 2014 states that computing is a key skill for everyday life. Computers and tablets are just some of the tools that can be used to communicate and present information.

Through teaching computing, we equip children to participate in a world of rapidly changing technology. We enable them to find, explore, analyse, and present information. We also help them develop the necessary skills for using information in a discriminating and effective way. This is a major part of enabling children to be confident, creative, and independent learners.

The curriculum aims to ensure that all pupils:

- Can understand and apply the key principles of computer science, including algorithms, logic, data representation and communication.
- Can analyse problems in computational terms and have experience of writing computer programs.
- Can evaluate and apply information technology, including new or unfamiliar technologies analytically to solve problems.
- Are responsible, competent, confident, and creative users of information and communication technology.

The objectives of teaching computing are to enable children:

- To develop capability in finding, selecting, and using information.
- To use computing for effective and appropriate communication.
- To monitor and control events, both real and imaginary.
- To apply their computing skills and knowledge to their learning in other areas.
- To explore their attitudes towards computing and its value to them and society in general. For example, to learn about issues of security and personal safety, confidentiality, and accuracy.
- Develop their understanding of how digital systems work, and to become digitally literate individuals.

INTENT

Computing has become part of the way in which we all work and entertain ourselves. Almost everything we do at school now involves the use of Information and Communication Technology (ICT):

- online lesson research, teaching plans and resource materials;
- lesson delivery via interactive whiteboard;
- communication by e-mail;
- document distribution and storage;
- assessment information analysis;
- production and editing of reports.

At Fosse Mead we want pupils to be MASTERS of Technology and not slaves to it. Technology is everywhere and plays a pivotal part in students' lives, therefore, we want to model and educate our pupils on how to use technology positively, responsibly, and safely.

We want our pupils to be creators not consumers and our broad curriculum encompassing computer science, information technology and digital literacy reflects this. We want our pupils to understand that there is always a choice with using technology and as a school we utilise technology (especially social media) to model positive use.

We recognise that the best prevention for a lot of issues we currently see with technology/social media is through education. Building our knowledge in this subject will allow pupils to effectively demonstrate their learning through creative use of technology. We recognise that technology can allow pupils to share their learning in creative ways. We also understand the accessibility opportunities technology can provide for our pupils.

Our knowledge rich curriculum has to be balanced with the opportunity for pupils to apply their knowledge creatively which will in turn help our pupils become skilful computer scientists. We encourage staff to try and embed computing across the whole curriculum to make learning creative and accessible. We want our pupils to be fluent with a range of tools to best express their understanding and have the independence and confidence to choose the best tool to fulfil the task and challenge set by teachers.

Our objectives in the teaching of Computing are:

- to facilitate the finding, selection and use of information
- to teach the use of ICT for effective and appropriate communication
- to enable the monitoring and control of events, both real and imaginary
- to teach the application of Computing to children's learning across the curriculum
- to explore the value of ICT, both to children and to society in general
- to examine issues of security, personal safety, confidentiality and accuracy
- to develop the cross-curricular use of Computing in all subjects.

IMPLEMENTATION

Fosse Mead Primary Academy follows a comprehensive progression document to best embed and cover every element of the computing curriculum. The knowledge/skills statements build year on year to deepen and challenge our learners.

We follow the **Teach Computing Curriculum**, a scheme accredited and funded by the Department of Education. The scheme is structured in units that are based on a spiral curriculum. This means that themes are revisited regularly, at least once in each year group. Computing is taught discreetly weekly in KS1 and KS2 but the skills that the children learn are used across the wider curriculum. We recognise that all classes have children with a wide range of abilities and our curriculum has this in mind. All lessons build on the learning from the previous lesson and, where appropriate, activities are scaffolded so that all pupils can succeed and thrive.

Pupils that require it are provided with additional resources such as visual prompts to ensure they reach the same learning goals as the rest of the class. Exploratory tasks foster a deeper understanding of a concept and this challenges pupils to apply their learning in different contexts and make connections with other learning experiences. We recognise that all classes have children with a wide range of computing abilities. This is especially true when some children have access to ICT 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);
- 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.
- challenge is provided to children through questioning and task.

Computing Curriculum Planning

The Foundation Stage / Early Years.

Computing/ICT in our EYFS is an integral part of day to day life. We relate the ICT aspects of the children's work to the objectives set out in the Early Learning Goals (ELGs) which underpin the curriculum planning for children aged three to five. Pupils learn to interact with technology in EYFS, using computers, Interactive Boards and floor robots and then consolidate and build on that learning in KS1. Children gain confidence, control and language skills through opportunities to use the interactive whiteboard or program a remote controlled toy. Recording devices can be used to support children to develop their communication skills, especially for those with English as an additional language.

KS1:

By the end of key stage 1 children 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.

KS2:

By the end of key stage 2 children 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

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, graphics work 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 enables children to present information and conclusions in the most appropriate way. Much software used in schools is generic in its design and can therefore be used in several curriculum areas.

English

Computing is a major contributor to the teaching of English. Children's reading is supported through the use of Read Write Inc Phonics, Lexia online, Ed. Shed and Accelerated Reader. As the children develop mouse and keyboard skills, they learn how to edit and revise text on a computer. They also learn how to improve the presentation of their work by using desktop publishing software.

Mathematics

Children use computing in mathematics to collect data, make predictions, analyse results, and present information graphically. Children also have access to Times Table Rockstars and Numbots to develop their core number skill using computing technology.

Science

Software is used to animate and model scientific concepts and to allow children to investigate processes which it would be impractical to do directly in the classroom. Data loggers and iPads are used to assist in the collection of data and in producing tables and graphs in order to present the scientific discoveries children have made.

Personal, social and health education (PSHE)

Computing contributes to the teaching of PSHE in that children in computing classes learn to work together in a collaborative manner. They also develop a sense of global citizenship by using the Internet. E-Safety is taught throughout our computing lessons and following discreet sessions from Project Evolve. Project Evolve outlines key areas of E-Safety learning for all children in different year groups and allows teachers to formally assess pupil understanding prior to sessions in order to provide bespoke material for the needs of a cohort.

Computing and inclusion

At Fosse Mead Primary Academy, we teach Computing to all children, whatever their ability and individual needs ensuring equality. Computing/ICT forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our Computing teaching, we provide learning opportunities that enable all pupils to make good progress. We strive hard to meet the needs of those pupils with special educational needs, those with disabilities, those with special gifts and talents, and those learning English as an additional language, and we take all reasonable steps to achieve this. For further details, see separate policies: Special Educational Needs; Disability Discrimination; Gifted and Talented Children; English as an Additional Language (EAL).

When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, and differentiation – so that we can take some additional or different action to enable the child to learn more effectively

(e.g. a lot of software can be differently configured for different ability ranges). Assessing progress against the National Curriculum levels of attainment allows us to evaluate each child's progress against expected levels. This ensures that our teaching is matched to the child's needs.

Intervention through School Action and School Action Plus will lead to the creation of an Pupil Outcome Plan (POP) for children with special educational needs. The POP may include, as appropriate, specific targets relating to Computing/ICT. In some instances, the use of Computing/ICT has a considerable impact on the quality of work that children produce, by increasing their confidence and motivation.

We enable pupils to have access to the full range of activities involved in learning Computing. We have a range of software which is designed to include all learners. Our hardware can accept a range of input devices catering to pupils with specific difficulties. Where children are to participate in activities outside the classroom, e.g. a visit to an ICT exhibition, we carry out a risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all pupils.

IMPACT

Computing at Fosse Mead is delivered through our 6 academy values: kindness, resilience, courage, enthusiasm, curiosity and responsibility. Through this, children experience engaging and challenging computing teaching. We constantly ask the WHY behind their learning and not just the HOW. Learners discuss, reflect and appreciate the impact computing has on their learning, development and wellbeing.

Finding the right balance with technology is key to an effective education and a healthy lifestyle. The way we implement computing helps children realise the need for the right balance and one they can continue to build on in their next stage of education and beyond. We encourage regular discussions between staff and pupils to best embed and understand this.

Assessment for Learning

Teachers will assess children's work in computing by making formal judgements during lessons. On completion of a piece of work, the teacher assesses the work and uses this assessment to plan for future learning. Written or verbal feedback is given to the child to help guide his/her progress. Older children are encouraged to make judgements about how they can improve their own work. Children are encouraged to respect each other's work and opportunities for peer feedback are clear. Peer feedback should be positive and constructive and the teacher will monitor the feedback to ensure they are appropriate and respectful. This enhances our zero tolerance for cyber bullying and educates children when posting online in a space.

The subject leader keeps samples of the children's work in a portfolio. This demonstrates the expected level of achievement in computing for each age group in the school.

Resources

Fosse Mead Primary Academy invests in the hardware and software available for pupils to ensure all have good access to a range of ICT.

ICT technicians within the trust to keep our equipment in good working order. Members of staff report faults to the TMET help desk and quick responses are provided. The technicians will also set up new equipment and install software and peripherals.

In order to keep our school computers virus-free, no software from home will be installed on school computers. Along with laptops computers the school has the following:

Hardware

- iPads
- Network, including switch, router and server PC
- Network shared resources, including printers
- Interactive whiteboards
- Scanner
- Digital cameras
- Data loggers and sensors
- Floor robots
- Headphone and microphones
- Micro-bits

Software

- Word processing and desktop publishing programmes
- Painting and drawing software
- Various apps
- Music composition package
- Multimedia presentation programme
- Spreadsheet and database programmes
- Virus protection

Online materials

- Online content subscription (TT Rockstars, Ed Shed, White Rose Maths, Numbots, Letter Join and Lexia)
- School website and intranet
- School email accounts for staff
- School user accounts for pupils

Monitoring and review

The coordination 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 a termly summary report in which she/he evaluates the strengths and weaknesses in Computing and indicates areas for further improvement;
- Reviewing policy yearly.

The quality of teaching and learning in Computing is monitored and evaluated by the headteacher as part of the school's agreed cycle of lesson observation.

This policy will be reviewed at least every years or when major changes to the computing curriculum are made.