

The Pathfinder CofE Primary School Computing Policy

Introduction

Computing at The Pathfinder CofE Primary School is an integral part of our curriculum and an invaluable skill for every day life. We believe that technology can provide enhanced collaborative learning opportunities, support conceptual understanding of new concepts and enables our children to become digitally literate. They will be able to use, express themselves and develop their ideas through computing, at a level suitable for the future workplace and as active participants in a digital world. At The Pathfinder CofE Primary School we recognise that our children are entitled to a structured and progressive approach to the learning of the skills needed to enable them to use it effectively.

The Pathfinder CofE Primary School Computing Mission Statement

Within our computing curriculum we provide our children the opportunity to be independent thinkers and problem solvers of when and how they can use digital media in different aspects of their lives.

Children are able to use their prior knowledge to progress and to develop their enquiring minds to discover where computing can take them.

We give our children the opportunities to excel in digital literacy, computer science, information technology and online safety, enabling children to become confident, creative and independent learners.

In the ever changing digital world, our intention is to provide all children with not only the skills to use the technology that exists today, but the life long, thinking skills and passion to continue to develop their love of computing through secondary school and beyond.

Intent

At The Pathfinder CofE Primary School, it is our intention to enable children to find, explore, analyse, exchange and present information. Technology is everywhere and will play a pivotal part in children's lives. Therefore, we want to model and educate our children on how to use technology positively, responsibly and safely. Our broad curriculum encompasses computing, information technology and digital literacy. Computing skills are a major factor in enabling children to be confident, creative and independent learners and it is our intention that children have every opportunity available to allow them to achieve this.

Our aims

- Use technology imaginatively and creatively to inspire and engage all children;
- Meets the requirements of the National Curriculum Programmes of Study for computing;
- Use computing as a tool to enhance learning throughout the curriculum;

- Equip children with skills, strategies and knowledge that will enable them to reap the benefits of the online world, whilst being able to minimise risk to themselves or others;
- Responds to new developments in technology;
- Equips pupils with the confidence and capability to use Computing throughout their later life;
- Enhances learning in other areas of the curriculum using computational skills;
- Develops the understanding of how to use computing safely and responsibly.

The National Curriculum for Computing aims to ensure that all pupils:

- Can understand and apply the fundamental principles of computer science, including logic, algorithms, data representation, and communication
- Can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- 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.

Rationale

The school believes that IT, computer science and digital literacy:

- Are essential life skills necessary to fully participate in the modern digital world.
- Allows children to become creators of digital content rather than simply consumers of it.
- Provides access to a rich and varied source of information and content.
- Communicates and presents information in new ways, which helps pupils understand, access and use it more readily.
- Can motivate and enthuse pupils.
- Offers opportunities for communication and collaboration through group working both inside and outside of school.
- Has the flexibility to meet the individual needs and abilities of each pupil.

Objectives

Early years

It is important in the foundation stage to give children a broad, play-based experience of IT and computing in a range of contexts, including off-computer activities and outdoor play.

Computing is not just about computers. Early years learning environments should feature IT scenarios based on experience in the real world, such as in role play. Children gain confidence, control and language skills through opportunities 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.

By the end of 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 a sequence of instructions.
- Write and test simple programs.
- Use logical reasoning to predict and computing the behaviour of simple programs.
- Organise, store, manipulate and retrieve data in a range of digital formats.
- Communicate safely and respectfully online, keeping personal information private, and recognise common uses of information technology beyond school.

By the end of Key Stage 2 pupils should be taught to:

- Design and write 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; generate appropriate inputs and predicted outputs to test programs.
- Use logical reasoning to explain how a simple algorithm works 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.
- Describe how internet search engines find and store data; use search engines effectively; be discerning in evaluating digital content; respect individuals and intellectual property; use technology responsibly, securely and safely.
- Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

Implementation

At The Pathfinder CofE Primary School, our scheme of work for Computing is adapted from the 'Teach Computing' Curriculum and covers all aspects of the National Curriculum. This scheme was chosen as it has been created by subject experts and based on the latest pedagogical research. It provides an innovative progression framework where computing content (concepts, knowledge, skills and objectives) has been organised into interconnected networks called learning graphs.

The curriculum aims to equip young people with the knowledge, skills and understanding the need to thrive in the digital world of today and the future. The curriculum can be broken down into 3 strands: computer science, information technology and digital literacy, with the aims of the curriculum reflecting this distinction.

In Key Stage 1, children have weekly computing lessons. They have access to a wide range of devices in order to enhance their learning.

Within Key Stage 2, computing lessons are taught as a block every half term. This enables children time to further explore and delve deeper into their learning, enabling them to ask those 'big questions'.

In the Early Years the approach is through cross-curricular learning with an emphasis on hands on experiences and is assessed through the Understanding the World, Early Learning Goal. Teaching is through context-based and role play experiences using many resources such as i-pads and programmable toys.

Key Stage 1

- Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of instructions.
- Write and test simple programs.
- Organise, store, manipulate and retrieve data in a range of digital formats.
- Communicate safely and respectfully online, keeping personal information private, and recognise common uses of information technology beyond school.

Key Stage 2

- Design and write 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; generate appropriate inputs and predicted outputs to test programs.
- Use logical reasoning to explain how a simple algorithm works 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.
- Describe how Internet search engines find and store data; use search engines effectively; be discerning in evaluating digital content; respect individuals and intellectual property; use technology responsibly, securely and safely.
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Online Safety

The Pathfinder CofE Primary School is fully committed to keeping all of our children safe. Learning about online safety happens through a range of subjects and approaches. We use 'Project Evolve' resourcing in line with the 'Education for a Connected World' strands and objectives.

We want our children to become digitally literate, critical, safe and responsible citizens to enable effective and enjoyable experiences in a digital world. We are fully committed to keeping all of our children safe and recognise that learning about online safety happens through a range of subjects and approaches. We recognise that online safety education is a whole school matter and goes well beyond the computing curriculum alone, therefore, our teaching of framework objectives will come in many forms, for example, through discrete online safety, PSHE or RHE lessons, as well as other curriculum areas, pastoral discussions when online safety matter arise, assemblies and special events. With this approach, it is our intention that pupils will build resilience and develop safe and appropriate behaviours online, which in turn will lead to positive online experiences.

Impact

We encourage our children to enjoy and value the curriculum we deliver. We aim to ask WHY behind their learning, as well as 'HOW'. We want children to discuss, reflect and appreciate the impact computing has had on their learning journey.

The children showcase their work in a number of ways and look for evidence through reviewing children's knowledge and skills digitally and observing learning regularly.

The progress of our computing curriculum is demonstrated through outcomes and the record of coverage in the process of achieving these outcomes.

Assessment

Teachers regularly assess progress through observations and evidence. Key objectives to be assessed are taken from the National Curriculum to assess computing each term. Assessing computing is an integral part of teaching & learning and key to good practice.

Assessment should be process orientated - reviewing the way that techniques and skills are applied purposefully by pupils to demonstrate their understanding of computing concepts. As assessment is part of the learning process, it is essential that children are closely involved. Assessment can be broken down into;

Formative assessments are carried out during and following short focused tasks and activities. They provide children and teaching staff the opportunity to reflect on their learning in the context of the agreed success criteria. This feeds into planning for the next lesson or activity.

Summative assessment should review children's ability and provide a best fit 'level'. Independent tasks provide a number of opportunities and scope for children to demonstrate their capability throughout the term. There should be an opportunity for children review and identification of next steps. Summative assessment should be recorded for all children – showing whether they have met, exceeded or not achieved the learning objectives. This will be recorded on Pupil Asset.

We assess the children's work in computing by making informal judgments as we observe the children during lessons. Summative assessments are incorporated in Key Stage 2.

Monitoring and evaluation

The subject leader is responsible for monitoring the standard of the children's work and the quality of teaching in line with the schools monitoring cycle. This may be through lesson observations, child discussion and evaluating children's work.

We allocate time for the vital task of reviewing samples of children's work and for visiting classes to observe teaching in the subject.

The role of the Subject Leader

There is a computing subject leader who is responsible for the implementation of computing policy across the school.

Their role is to:

- Offer help and support to all members of staff (including teaching assistants) in their teaching, planning and assessment of computing.
- Provide colleagues opportunities to observe good practice in the teaching of computing.
- Maintain resources and advise staff on the use of digital tools, technologies and resources.
- Monitor classroom teaching or planning following the schools monitoring programme.
- Monitor the children's progression in computing, looking at examples of work of different abilities.
- Manage the computing budget.
- Keep up-to-date with new technological developments and communicate information and developments.

The role of the class teacher

Individual teachers will be responsible for ensuring that children in their classes have opportunities for learning computing and using their knowledge, skills and understanding of computing across the curriculum.

They will plan and deliver the requirements of the National Curriculum for Computing to the best of their ability. We set high expectations for our children and provide opportunities for all to achieve, including girls and boys, children with educational special needs, children with disabilities pupils from all social and cultural backgrounds, and those from diverse linguistic backgrounds.

The class teacher's role is a vital role in the development of computing throughout the school and will ensure continued progression in learning and understanding, and create effective learning environments.

The class teacher will also:

- Secure pupil motivation and engagement
- Provide equality of opportunity using a range of teaching approaches and techniques
- Use appropriate assessment techniques and approaches
- Set suitable targets for learning as outlined in the inclusion policy.
- Maintain up to date assessment records (see policy document).

Staff training

The computing subject leader will assess and address staff training needs as part of the annual development plan process or in response to individual needs and requests throughout the year.

Individual teachers should attempt to continually develop their own skills and knowledge, identify their own needs and notify the subject leader.

Teachers will be encouraged to use IT and computing to produce plans, reports, communications and teaching resources.