

Introduction

The use of computers and computer systems is an integral part of the National Curriculum and knowing how they work is a key life skill. In an increasingly digital world there now exists a wealth of software, tools and technologies that can be used to communicate, collaborate, express ideas and create digital content. At Perton First School we recognise that pupils are entitled to a broad and balanced computing education with a structured, progressive, approach to the learning of how computer systems work, the use of IT and the skills necessary to become digitally literate and participate fully in the modern world. The purpose of this policy is to state how the school intends to make this provision.

Intent:

At Perton First School, we recognise that pupils are entitled to a broad and balanced computing education with a structured, progressive approach to the learning of how computer systems work, the use of IT and the skills necessary to become digitally literate and participate fully in the modern world.

Implementation

At Perton First School, we have a bespoke computing curriculum that has been created to ensure that our children leave our school with the necessary skills and knowledge to continue their learning journey in Computing. Children have weekly computing lessons in our ICT suite and have access to other digital devices, including; iPads, Sphero coding robots and Bee-bots.

Impact

We measure the impact of the Computing Curriculum through pupil discussions and by monitoring the attainment levels of our children using our own assessment trackers.

Aims

The school's aims are to:

- Provide a broad, balanced, challenging and highly enjoyable curriculum for all pupils.
- Develop pupils' computational thinking skills that will benefit them throughout their lives.
- Meet the requirements of the National Curriculum program of study for computing at Key Stage 1 and 2
- To respond to new developments in technology
- To equip pupils with the confidence and skills to use digital tools and technologies throughout their lives.
- To enhance and enrich learning in other areas of the curriculum using IT and computing.
- To develop the understanding of how to use computers and digital tools 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 ICT, computer science and digital literacy:

- are essential life skills necessary to fully participate in the modern digital world.
- allow children to become creators of digital content rather than simply consumers of it.
- provide 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
- 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 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.

Resources and access

The school acknowledges the need to continually maintain, update and develop its resources and to make progress towards consistent, compatible computer systems by investing in resources that will effectively deliver the objectives of the National Curriculum and support the use of IT, computer science and digital literacy across the school. Teachers are required to inform Link2ICT (our school's technicians) of any faults as soon as they are noticed. Resources if not classroom based are located in

the computing suite. Computing network infrastructure and equipment has been sited so that:

- Every classroom from nursery to Year 4 has an interactive whiteboard for IT use
- There is a computing suite with 16 desktop computers.
- Early Years, KS1 and KS2 have designated iPads for use across the curriculum
- Wireless internet access is available in all classrooms.
- Each class has an allocated time slots each week for teaching computing as a discrete subject.
- The computing suite, laptops and iPads are available for use throughout the school day as part of computing lessons and for cross-curricular use.
 - Pupils may use IT and computing independently, in pairs, alongside a TA or in a group with a teacher provided that they are monitored by staff.

Planning

As of September 2021, we are introducing Entrust's computing curriculum scheme to ensure progression throughout school.

Assessment and record keeping

Assessment against the computing curriculum relies on teachers regularly assessing progress through observations and the gathering of evidence. Key objectives to be assessed are taken from the National Curriculum to assess computing and enter a 'judgment' in-line with our assessment tracking system twice a year in January and July. 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 pupils are closely involved. Assessment can be broken down into;

- Formative assessments are carried out during and following short focused tasks and activities. They provide pupils and teaching staff the opportunity to reflect on their learning in the context of the agreed success criteria. This feeds into the amendment of planning for subsequent lessons or activities.
- 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. Summative assessment should be recorded for all pupils - showing whether the pupils have met, exceeded or not achieved the learning objectives for their year group.

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 learning walks, lesson observations, pupil discussions and evaluating pupil work.

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

Equal Opportunities and Inclusion

Through all subjects we ensure that the school meets the needs of all, taking account of gender, ethnicity, culture, religion, language, sexual orientation, age, ability, disability and social circumstances. It is important that in this school we meet the diverse needs of pupils to ensure inclusion for all and that all pupils are prepared for full participation in a multi-ethnic society.

Access to the Curriculum

All children have an entitlement to a broad and balanced curriculum, which is differentiated to enable children to

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understand the relevance and purpose of learning activities and experience levels of understanding and rates of progress that bring feelings of success and achievement.

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 with planning and resources necessary for an enriched curriculum
- 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.
- keep up-to-date with new technological developments and communicate information and developments with colleagues
- lead staff training on new initiatives.
- attend any appropriate training
- have enthusiasm for computing and encourage staff to share this enthusiasm.
- keep parents and governors informed on the implementation of computing in the school.
- liaise with all members of staff on how to reach and improve on agreed targets
- help staff to use assessment to inform future planning.

The role of the class teacher

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

They will deliver the requirements of the National Curriculum for Computing to the best of their ability, with the guidance and help of the computing leader. We set high expectations for our pupils and provide opportunities for all to achieve, including girls and boys, pupils with educational special needs, pupils 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.
- promote children's achievements through the displaying of 'Digital Badges' on class pages.

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.

Health and safety

The school is aware of the health and safety issues involved in children's use of IT and computing.

All fixed electrical appliances in school are tested by an approved Local Authority contractor every five years and all portable electrical equipment in school is tested by an external contractor every twelve months.

It is advised that staff should not bring their own electrical equipment in to school but, if this is necessary, equipment must be PAT tested before being used in school. This also applies to any equipment brought in to school by, for example, visitors running workshops, activities, etc. and it is the responsibility of the member of staff organising the workshop, etc. to advise those people.

All staff should visually check electrical equipment before use and take any damaged equipment out of use. Damaged equipment should then be reported to a computer technician, bursar or head teacher who will arrange for repair or disposal.

In addition:

- children should not put plugs into sockets or switch the sockets on.
- trailing leads should be made safe behind the equipment
- liquids must not be taken near the computers
- magnets must be kept away from all equipment
- safety guidelines in relation to IWBs will be displayed in the classrooms
- Online safety guidelines will be set out in the Online Safety Policy & Acceptable Use Policy

Cross curricular links

As a staff we are all aware that IT and computing skills should be developed through core and foundation subjects. Where appropriate, IT and computing should be incorporated into schemes of work for all subjects. IT and computing should be used to support learning in other subjects as well as developing computing knowledge, skills and understanding.