



Computing Guidance



Our Vision

Our vision and values are at the core of everything we do. They underpin our teaching and learning, and provide an environment which prepares our pupils as confident, happy citizens.

Our School Aims are:

- To provide a safe and stimulating school environment.
- To promote high standards of teaching and learning.
- To value and develop all members of the school community.

Curriculum

The school's curriculum is designed to meet the needs of its pupils, and its major aims are to provide all children with an education which will help them to:

- Enable all to achieve their potential, celebrating success within a caring environment.
- Raise levels of attainment for all pupils, enabling them to achieve their personal best.
- Foster a love of learning.
- Develop confident, disciplined and enquiring learners, able to make informed choices.
- Develop an increasing responsibility in pupils for their own life-long learning.
- Foster self-esteem and personal responsibility, linked to respect for the needs and feelings of others.
- Facilitate considerate and positive relationships between all members of the school community.
- Ensure equal and inclusive opportunities in relation to gender, race, class, special needs and belief.
- Value and respect all cultures.
- Provide a safe and happy workplace.
- Promote a thoughtful attitude towards the immediate and wider environment.

Rationale

A high-quality computing education equips all 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, 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.

Aims

The national curriculum for computing aims to ensure that all pupils:

- Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation.
- 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 ICT.

Subject Content

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 a debug for simple programs.
- Use logical reasoning to predict the behaviour of simple programs.
- Use technology purposefully to create, organize, store, manipulate and retrieve digital content.
- Recognize common uses of information technology beyond school.
- Use technology safely and respectfully, keeping personal information private; identifying 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 simple 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 parts.
- 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; recognize acceptable and unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Computing Curriculum Overview

Newfield Park's computing curriculum, revised in 2019, splits these National Curriculum objectives into year-group specific learning objectives that build on knowledge attained in previous years. The three strands of this curriculum are:

- Coding
- Digital Literacy
- E-Safety and the Internet

A copy of this curriculum has been given to all teachers and is also available in school and on the Newfield Park Website. Teachers should plan lessons based on the objectives given in this curriculum.

Organisation

Teachers should teach approximately 45 minutes to 1 hour of discrete computing lessons per week; however, it is expected that during the week additional ICT and computing time will be provided through cross curricular links (e.g. music and art), as well as by opportunities to utilise their ICT skills to present work and complete tasks in other subjects.

As of 2019, it is expected that teachers plan to teach one strand of the computing curriculum in each half term, ensuring that children receive a sequence of lessons with a



logical progression, building on prior learning and leading to a clear outcome at the end of the unit.

To ensure accessibility in coding and progression across both Key Stages, each year group should teach their coding objectives through an appropriate coding language:

- **Year 1:** ScratchJr and J2E
- **Year 2:** ScratchJr and J2E
- **Year 3:** 2Code
- **Year 4:** 2Code and Scratch 3.0
- **Year 5:** Scratch 3.0
- **Year 6:** Scratch 3.0 and Python

Role of the Subject Coordinator

The subject coordinator is responsible for monitoring curriculum coverage, planning and recording of work across all year groups. Evidence of work and displays will be collected to form a portfolio of IT learning across the school.

The subject coordinator will produce an Impact Statement identifying short, medium and long term targets for computing within the school, which will be reviewed on a termly basis to identify the progress that has been made toward the targets and the impact that they have had. Working with the IT Technician and management, the subject coordinator will take the lead in addressing the points in the action plan, including arranging appropriate CPD and identifying hardware and software requirements. The subject coordinator will also endeavour to respond to staff concerns about the teaching of computing within the school and more general ICT concerns.

Assessment and Record-Keeping Procedures

Opportunities for assessment will be identified when planning. Children will have regular teacher assessment within and after the lesson, and they will also be encouraged to reflect upon their work through peer and self-assessment. Children's work and reflections may be written in their learning journeys or produced electronically and printed; increasingly, a greater proportion of children's computing work will be stored electronically or online on cloud-based platforms, where teachers will be able to view and assess it accordingly.

At the end of each half term, teachers will make summative assessments of the attainment and progress made by pupils, judged against the year-group specific targets provided in the school's Curriculum Overview: a level of developing, secure or exceeding will be recorded. These assessments may also be used formatively to inform planning and content for the subsequent half term.

By the end of each Key Stage, pupils are expected to know, apply and understand the matters, skills and processes outlined in the relevant programme of study.



SEND Provision

At Newfield Park we believe every child has an equal right to a rounded education that allows them to achieve their full potential. All pupils, regardless of ability or background, should have the opportunity to fully develop their computing capabilities. This will be accomplished by:

- Planning lessons to ensure that all tasks can be appropriately scaffolded or differentiated to accommodate children with SEND – this may involve using alternative software or hardware, giving a child additional support and interventions in class, or by changing the complexity of the task.
- Ensuring that children with SEND can access the same, or similar, tasks as the rest of the class, in line with the curriculum.
- Showing awareness of the additional needs of children who may come from disadvantaged backgrounds or who receive additional Pupil Premium funding – for instance, by ensuring that any children who do not have access to a computer at home can seek to use resources in school at a time outside of their standard computing lesson (e.g. at lunchtime).
- Translating instructions and tasks as appropriate to accommodate children who have English as an additional language.
- Accounting for the needs of more able and gifted children by making tasks more challenging, appealing to their problem solving, reasoning and critical thinking skills and creating appropriate extension activities.

E-Safety

E-Safety forms a cornerstone of the computing curriculum at Newfield Park and is both taught in discrete lessons during the year and referred to as part of every computing lesson. As of September 2019, Newfield Park's revised computing curriculum includes a separate strand of E-Safety teaching which outlines year-group specific targets; these targets build on previous years and are designed to specifically address current E-Safety concerns. E-Safety issues, including cyberbullying, are also discussed in PSHE lessons and in whole-school assemblies.

The school's wider approach to E-Safety is outlined in a separate guidance, available on the school website, of which all staff and governors are aware and which has been agreed upon by senior management and governors. All members of staff will have signed a staff Acceptable Use Guidance (AUP) as outlined on the school website. At the start of each academic year, all children will sign a child-friendly AUP as outlined on the school website. Parents and carers will have signed the school's Acceptable Use policies in regard to their children's ability to access the school network from home.



Safeguarding

Newfield Park believes that maintaining user, file and system security should be of paramount importance in all computing activities. All staff and pupils have personalized usernames and passwords that they should always use to access networked resources.

All networked devices, including laptops and iPads, have filtered Internet access monitored by RM and the school's ICT Technician. Staff are responsible for checking and reviewing the online resources they make available to children prior to the lesson, ensuring that they are appropriate to the age range and ability of the children in question; where lessons involve online research and the use of open-ended resources, staff should dynamically assess any risks within the lesson and respond quickly in the event of children finding inappropriate content, following procedures outlined in the E-Safety guidance.

Appropriate use, and inappropriate use, of school equipment, network resources, software and all files is fully described in the E-Safety guidance and the appropriate AUPs. Nobody should attempt, without authorization from the ICT Technician and where necessary the Head teacher or RM, to install software of any kind onto the school's network or onto any device connected to it. All installations, downloads, system changes and un-installations will be carried out by or under the guidance of the ICT Technician and RM where applicable.

If, during the course of a computing lesson, the teacher becomes aware of any child protection concern, or a child makes a disclosure of such a concern, they will immediately log this on the CPOMS system and follow the school's wider safeguarding guidance.

Pupil Premium

Newfield Park is committed to addressing the additional needs of children who may come from disadvantaged backgrounds or who receive additional Pupil Premium funding. Staff understand the importance of quality teaching for all, identifying potential barriers for learning and exploring varied teaching methods and interventions to achieve the best outcomes.

Staff regularly use data to track and monitor progress and seek to engage parents in all areas of their child's learning. Strategies at the core of our practice include collaborative learning, high quality feedback, metacognition techniques, raising aspiration and the use of digital technologies.

Other Policies and Related Documents

- Health and Safety Guidance



- E-Safety Guidance
- National Curriculum
- Appropriate Use Policies (Staff, Children and Parental)