Newdale Primary School
Computing Policy

Reviewed March 2023 by G. Banfield
Next Review March 2025

Introduction

At Newdale, we recognise that all pupils are entitled to a broad and balanced Computing education which empowers them to use computational thinking and creativity. Using the National Curriculum as a starting point, we provide a structured, progressive approach to learning how computer systems work, the use of IT, how to stay safe online and the skills necessary to become digitally literate and participate fully in the modern world. We believe that computing is a pivotal part of our curriculum and due to this, we invest heavily in providing up-to-date equipment and software to facilitate regular curriculum access. Newdale is a well-equipped school; every child in KS2 has a Chromebook, KS1 classes have individual laptops and there is a suite of iPads available for use throughout the school. We are also fortunate to have a variety of cameras, digital recording equipment and floor robots to support teaching and learning. Our Computing Curriculum is clearly mapped to display progression of learning in knowledge, skills and vocabulary thus enabling our pupils to know more and remember more using the whole-brain learning approach.

Aims

The school's aims are to:

- Meet the requirements of the national curriculum programmes of study for computing at Key Stage 1 and 2.
- Provide a broad, balanced, progressive challenging and enjoyable curriculum for all pupils.
- To use adaptive teaching methods to ensure all pupils can access our Computing objectives.
- Develop pupil's computational thinking skills that will benefit them throughout their lives.
- 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 IT, Computer Science and Digital Literacy progression:

- provides 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 information more readily.
- motivates 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 (see also Early Year's Policy)

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 "Barefoot" 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 recognize 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 the Computing subject leader of any faults as soon as they are noticed. Resources, if not classroom based, are located in the Computing cupboard. A service level agreement with Telford and Wrekin is currently in place to help support the subject leader to fulfill this role both in hardware & software. Computing network infrastructure and equipment has been sited so that:

- Every classroom from nursery to Y6 has at least 2 computers connected to the school network and an interactive touchscreen board with sound.
- each classroom contains a set of 30 laptops or Chromebooks.
- There is an iPad Sync & Charge cabinet in school containing 30 iPads. Additionally, each class base also has a mini-iPad for class teachers and teaching assistants to use.
- The school has a data projector for the hall, for use in assemblies, presentations, group teaching and productions.
- The school has access to a range of hardware to support the NCCE scheme of work, such as BeeBots and MicroBit microcomputers.
- Software and hardware to support the NCCE scheme is regularly updated to ensure that it is compatible and appropriate to suit the pedagogy of each year group.
- Pupils may use IT and Computing independently, in pairs, alongside a TA or in a group with a teacher.
- The school has a Computing technician who is in school 2 days per week (Mondays and Fridays).
- A governor will be invited to take a particular interest in Computing in the school.

Planning

At Newdale we follow our own bespoke Computing progression document. The school adapts the National Centre for Computing Education “Teach Computing” scheme of work for pupils in Years 1-6. Substantive knowledge and disciplinary knowledge is progressive and “chunked” appropriately so that component knowledge builds sequentially to support composite tasks. To support EYFS in vocabulary acquisition and developing computational skills, Barefoot resources are used alongside regular instructional language modelling. Teachers have received training in adaptive teaching to support lower ability or SEND learners and challenge higher ability or G&T learners. Learning from previous units or year groups is regularly recapped to ensure that cumulative disfluency is avoided and misconceptions are regularly aired and addressed.

Assessment and record keeping (also see Assessment Policy)

Teachers regularly assess progress through observations and evidence. Key objectives to be assessed are taken from the National Curriculum to assess Computing each term. Teachers are encouraged to use Newdale's progression documents as guides when creating and assessing success criteria. Assessing Computing is an integral part of teaching and learning and is key to good practice. Assessment is 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 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 planning for the next lesson or activity.
- 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. There should be an opportunity for pupil review and identification of next steps. Summative judgements are recorded for all pupils on O Track – showing whether the pupils have met, exceeded, or not achieved the learning objectives.

We assess the children's work in Computing by making informal judgments as we observe the children during lessons. Once the children complete a unit of work, we make a summary judgment of the work for each pupil as to whether they have yet to obtain, obtained or exceeded the expectations of the unit.

We record the results in our assessment files and we use these to plan future work, provide the basis for progress and to communicate with the pupil's future class teacher(s). Reflections and flashbacks are used within lessons to ensure that substantive knowledge is assessed.

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 school's monitoring cycle. This may be through lesson observations, pupil discussion and evaluating pupil 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.

Pupils with special educational needs (see also SEN Policy)

We believe that all children have the right to access IT and Computing. In order to ensure that children with special educational needs achieve to the best of their ability, it may be necessary to adapt the delivery of the Computing curriculum for some pupils.

Computing forms part of the National Curriculum to provide a broad and balanced education for all children. Through the teaching of Computing, we provide opportunities that enable all pupils to make s t r o n g progress. We do this by setting suitable challenges and responding to each child's individual needs as well as choosing activities to suit the pedagogy of each year group. Where appropriate, IT can be used to support SEN children on a one-to-one basis where children receive additional support.

Equal opportunities (see also Equal Opportunities Policy)

We will ensure that all children are provided with the same learning opportunities regardless of social class, gender, culture, race, disability or learning difficulties. As a result, we hope to enable all children to develop positive attitudes towards others. All pupils have equal access to Computing and all staff members follow the equal opportunities policy. Resources for SEN children and gifted & talented will be made available to support and challenge appropriately.

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 with colleagues.
- lead staff training on new initiatives.
- Attend appropriate in-service 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 regular opportunities to study Computing and use their knowledge, skills and understanding of Computing across the curriculum.

They plan and deliver the requirements of the National Curriculum for Computing to the best of their ability whilst maintaining high expectations of the pupils. 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 in effective learning environments.

The class teacher will also:

- secure pupil motivation and engagement.
- provide equality of opportunity using a range of adaptive teaching approaches and techniques.
- Draw links to prior learning to build Computing schemata.
- 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.

Health and safety (see also Health and Safety Policy)

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 a 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 they use it 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.

Security

We take security very seriously. As such:

- the Computing technician will be responsible for regularly updating anti-virus software.
- SENSO is used to monitor all students and staff.
- use of IT and Computing will be in line with the school's 'Acceptable Use Policy'. All staff, volunteers and children must sign a copy of the schools AUP.
- parents will be made aware of the 'acceptable use policy' from school entry to the end of KS2.
- all pupils and parents will be aware of the school rules for responsible use of IT and Computing and the internet and will understand the consequence of any misuse.

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. Our school provides pupils with opportunities to enrich and deepen learning using a cross-curricular approach, which embeds Computing in English, Mathematics, Science, Geography and History from Year 1 to Year 6.

Parental involvement

Parents are encouraged to support the implementation of IT and Computing where possible by encouraging use of IT and Computing skills at home for pleasure, through home-learning tasks set through Google Classroom and use of the school website. Parents will be made aware of issues surrounding e-safety and encouraged to promote this at home.