Greenmount Primary School Computing and ICT Policy

The purpose of Primary Computing

'A high-quality computing education equips 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, and 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." (NC 2014).

This policy indicates the values, philosophy and practicalities in relation to the teaching and learning of and with Computing. It sets out a framework within which teaching staff can operate and give guidance on pedagogy, planning, teaching and assessment. This policy should be read in conjunction with our scheme of learning for Computing (see Purple Mash) that sets out in detail what children in different year groups will be taught and how ICT can facilitate or enhance learning in other curriculum areas.

This document is intended for:

- All teaching staff
- All staff with classroom responsibilities
- School governors
- Parents
- Inspection Teams

The context of Greenmount Primary School and Computing

Many children begin their journey at Greenmount Primary as avid consumers of technology in the form of games, viewing video/written content and some with the ability to communicate with others through social media apps and websites. In addition, the use of technology has vastly increased in recent years for all young people and is a key part of many young learner's home and school life. At Greenmount, we aim to nurture that interest and guide learners through the ever-changing world of technology. We aim to make children more aware of the risks of sharing/viewing content online and guide them to be independent and safe users of the internet. We aim to do this by not restricting, but guiding learners through the online world and addressing misconceptions/dangers as they arise. We aim to develop the digital literacy skills of all learners, regardless of their background or access to technology at home.

Our Intent

The policy of the school is to deliver a broad and balanced curriculum based on the objectives of the National Curriculum. Wherever possible the work is to be incorporated into a thematic curriculum that gives the taught computing skills a real-life purpose. All children should be presented with the opportunity to experience success in computing, regardless of ethnicity, gender, background or ability.

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 information and communication technology.

The Computing in the National Curriculum the teaching and learning of Computing can be split into three strands (Computer Science, Digital Literacy and Information Technology). It is therefore important that children recognise the difference between what makes each one relevant to their future, as well as their everyday lives. High quality teaching of Computing skills, from Reception through to Year 6, utilises a combination of practical lessons and theory lessons designed to promote discussion and nurture understanding, which are also relevant to many other areas of the curriculum including PSHE and Citizenship. The aims for these three strands are as follows:

Computer Science

- To enable children to become confident coders on a range of devices, understanding the practical applications of code
- To boost resilience through problem solving, debugging and 'tinkering' to achieve a specific aim.
- To develop children's understanding of how software is programmed and how technology is made and these are constantly evolving.

Digital Literacy

- To learn how to navigate the online world safely and respectfully through appropriate computing behaviours.
- To allow children to explore and use a range of digital devices and software to share and gather information.
- To improve children's evaluative skills about the quality and reliability of online content.

Information Technology

- To utilise information technology as a cross-curricular tool for learning, creating content and sharing information with an audience.
- To develop computing life skills that will prepare children for their next steps.

British Values within Computing

Greenmount pupils demonstrate the following values whilst learning computing skills by

Democracy

- Valuing everyone's ideas in order to form a majority.
- Working as part of a team and collaborating to use computing devices effectively.

Rule of Law

- Developing knowledge of lawful computing behaviours.
- Demonstrating respect for computing laws and how they protect our rights

Individual Liberty

- Taking responsibility for our own computing behaviours and understanding the impact of inappropriate computing behaviours on others
- Challenging stereotypes and bias.
- Exercising rights and personal freedoms safely through knowledge of online safety.

Respect and Tolerance

- Showing respect for others when undertaking research or sharing content online using computing devices.
- Providing opportunities for pupils of all backgrounds to achieve in computing.

Implementation

Planning

Teachers and HLTAs will teach computing activities in line with the National Curriculum objectives and progression documents and ensure, where possible, that there are 'real life links' that the children can see the practical applications of the taught computing skills. Teachers, where possible, will teach Computing skills to support a thematic approach making it specific to learning needs of the children in their class. Teachers will use the 'Purple Mash' scheme of work to support this.
Where possible, teachers will use previously taught Computing skills and digital devices to develop learning opportunities and outcomes across the curriculum, deepening the pupil's digital literacy and enriching the curriculum as a whole.

a) Long Term Planning
The teachers or HLTAs follow the 'Purple Mash' whole school scheme that ensures breadth and balance of a range of skills across each age range. Each year group has a curriculum overview which shows the computing topic taught in each term. Topics are chosen by the subject leader for curriculum relevance and to ensure progression of skills through the years. Where possible, links will be made to the overall theme for the half term in line with our creative curriculum.

A specific Online safety objective is taught the first week of every new computing topic. This is one chosen by the teacher based on the needs of their class. The Acceptable Use Policy is shared with children at the beginning of the school year, displayed clearly in the classroom and referred to regularly throughout the school year.

b) Medium Term Planning
The 'Purple Mash' scheme of work provides teachers with a medium term plan for each unit, providing the following:

- Curriculum Links, both in Computing and links to other subjects.
- The strand of computing taught in the unit (digital literacy, computer science, information technology)
- Prior and future learning links
- Preparatory tasks, teaching presentations and support videos
- Online safety guidance (where appropriate, including advice on possible dangers and annoyances)
- Supporting concept maps and quizzes for pupils
- Vocabulary banks for each topic and year group and 'key terms explained' document.

Wherever appropriate, Teachers will supplement any scheme lesson plans with additional 'theory' lessons to improve depth of understanding in areas such as algorithms and computational thinking. Lesson plans and resources to supplement the 'Purple Mash' scheme of work can be taken from:

- Purple Mash 'Computing Unplugged'
- Primary Computing website (primarycomputing.co.uk) Resources available on the shared school folder.
- Barefoot Computing (barefootcomputing.org)

Individual Lesson Plans

Plans for individual lessons are included within the presentations for each lesson. Links to online tools and videos are provided within the presentation to minimise unnecessary paperwork. All required online software is included within the 'Purple Mash' lesson to 'streamline' the preparation and teaching of computing lessons.

Staff Wellbeing

Staff wellbeing is a high priority at Greenmount and many steps are taken in computing to reduce excessive workload. The scheme 'Purple Mash' was chosen not just for its excellent content and resources, but also for its clear organisation of and wealth of supportive tools such as ready made presentations, videos, supporting learning materials, and 'in-house' programs that can be set as 'to dos' on children's individual profiles very easily. This ensures that high quality teaching of computing can be delivered regularly with minimal planning or organising of resources. Pupil's work is saved in their individual profile which can be retrieved quickly. Staff CPD and individual training sessions are included in the yearly subscription to Purple Mash.

Timetabling and teaching of Computing

Computing is taught by teachers and highly trained HLTAs on a weekly basis every other half term. For the duration of each computing topic, it will be timetabled an hour slot per week to allow for the sharing of school resources eg. Laptops, tablets, crumble kits etc. Additional computing skills can be taught through other subjects where appropriate wherever teachers identify an opportunity. The prior organisation of technology resources is recommended to avoid 'double booking'.

Enrichment of the Curriculum and increasing 'Computing Capital'

To further enrich children's knowledge and enjoyment of computing, the subject leader regularly organises computing workshops that use further practical applications of computing such as flying drones, programming robots and virtual reality workshops. Trips to the 'National Video Games Museum' are arranged for upper Ks2 to develop their cultural capital.

Hardware and Resources

Children have access to a range of computing devices to meet the aims of the national curriculum in computing. These resources include:

- 65 Dell laptops (2 full class sets, one set for each building)
- 90 latest version iPads (15 per year group)
- 45 Toshiba SatPro android tablets (20 in year 6 and 25 on standby for home learning)
- 5 iPads and 4 Amazon Fire Kids tablet and a selection of beebots for Nursery and EYFS
- Fully interactive smart board in each classroom
- Beebots and probots for KS1
- Microphones and Dictaphones in reading corners
- data loggers (for science and geography)
- 'Tuffcams' (in EYFS)
- Full class set of Crumble kits for programming/robotics

Health and Online Safety

The school takes online safety very seriously and is aware of the health and safety issues surrounding children's use of computers and the internet. We ensure that pupils have a safe environment in which to learn. We ensure effective filters are in place to safeguard pupils.

As such, we will ensure that:

- All fixed and portable appliance in school are tested by a certified PAT tester every twelve months.
- Damaged equipment is reported to the school business manager who will arrange for repair or disposal.
- Online safety is discretely taught at the beginning of each term by class teachers, through assemblies delivered by the computing subject leader and through parent presentations.
- External organisations such as the NSPCC and D:Side deliver special workshops for students and parents reading online safety.
- Dedicated page on our school website to direct parents to further information on how to keep children safe online with specific links for targeted safety advice on current games/trends.
- Children learn about their rights and responsibilities when using the Internet.
- All staff have regular safeguarding training which includes keeping children safe online.
- All pupils have their own personal login for laptops and safe-wall login when using the internet which can be used to flag up inappropriate internet use and safeguard accordingly.

In addition, online safety is embedded into 'Purple Mash' scheme and teachers can highlight relevant online safety points with each unit taught. Relevant online safety lessons will be delivered each half term, at the start of every computing topic. There will also be an Online safety week with accompanying assemblies each academic year to promote and make children aware of e-safety issues at school and at home. (For further details please see "E-safety Guidance for Schools 2014")

Measuring Impact

Assessment

Formative assessment will be conducted by the class teacher during lessons and will inform the objectives of the next lesson. Summative assessment tools are provided on the 'Purple Mash' which includes a progression overview with child friendly 'I can' statements and a spreadsheet where teachers can assess individual children against objectives and collate data to track whole class progress.

Teachers are encouraged to revisit computing skills throughout the year in different ways across the curriculum to deepen understanding, develop mastery and give opportunities to practise and apply previously taught skills in real life contexts.

The Role of the Computing Subject Leader in measuring Impact

The subject leader will gather evidence of the impact of computing teaching in a range of ways:

- lesson drop ins
- pupil interviews
- staff questionnaires/surveys on subject knowledge
- Monitoring of work produced in lessons
- feedback from school council
- feedback from teaching staff through anonymous surveys

This range of evidence will inform the subject leader on any successes or key issues which will then feed in to:

- Targeted staff meetings/CPD sessions for teaching staff and support staff
- Reviewing of the current provisions of hardware and software in school
- Example computing lessons for staff and peer review.