| Stapeley Broad Lane C.E. Primary School |
| Computing Policy |

Written in September 2016	Jane Welsh (IT leader)
Reviewed in February 2023 – to reflect the school's move to the NCCE scheme and the inclusion of pre-school.	Marco Cura (Computing leader)

The aim of this document is to provide an overview to the 2014 computing curriculum and a programme of study across Key Stages 1 and 2.

The national curriculum for computing has four main 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.

Key Stage 1
By the end of Key Stage 1 children should be able 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 and debug simple programs
- Use logical reasoning to predict the behaviour of simple programs
- Use technology purposefully to create, organise, store, manipulate and retrieve digital content
- Recognise common uses of information technology beyond school
- Use technology safely and respectfully, keeping personal information private; know 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
By the end of Key Stage 2 children should be able to:

- Design, write and debug 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
- 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 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; recognise acceptable and unacceptable behaviours; identify a range of ways to report concerns about content and contact.

A glossary of terms and examples of curriculum ideas are included in the appendix.

Planning and Delivery
Computing is taught through the NCCE Teach Computing scheme of work, a government funded and endorsed programme, with many STEM links. This curriculum ensures a balanced coverage of the three computing strands (computer science, information technology and digital literacy). The children work on all three strands each year. As they progress through the school, children build on their prior learning within each strand, covering new or deeper knowledge and developing their technical skills. The relevant computing experiences through which this knowledge-engaged curriculum is taught will benefit future learning in secondary school, further education and future work-places.

Programming/coding/debugging is a key part of the computing curriculum, and each year group has a least on unit of programming per year, with most undertaking two units in this key strand. Wherever possible, teachers are encouraged to make cross-curricular links. The units are clearly planned throughout the year groups, with six units being taught – one per half-term. This fulfils the requirements of the National Curriculum, ensuring breadth, balance, continuity and progression of the knowledge, skills and understanding required.

Assessment
The majority of units within our curriculum can be completed within the resources available through the school's subscription to j2e (www.j2e.com). Each child has their own account, which they access via a QR code. This enables quick logins and maximises curriculum time for children. Work is saved to the cloud via the website and the child's work is accessible throughout their time at our school. The children's work can easily be shared with classes, allowing children to demonstrate and discuss their learning with their peers. The teacher also has access to the children's work via j2e. Where work cannot be saved through this website, work is recorded in a child's computing book. Teachers can then be clear what each child knows, understands and can do. This is summarised in the school's assessment tracker each term, shared with parents at parents' evenings and reported in the end of year annual school report.

Monitoring and Evaluation

The subject leader for computing will, as part of our curriculum monitoring, evaluation and improvement processes, observe teaching of the subject and collect samples of work from each year group in the early years, KS1 and KS2. They will check what is being taught, its standards, progression between year groups and the levels of achievement. The curriculum leader will also undertake pupil voice interviews to gauge levels of understanding and engagement with the subject. As part of the process, the results of this monitoring will be reported to the governing body.

Special Educational Needs/Disabilities

All children have needs that are individual, special and ever changing. Classes contain children of mixed ability, so learning activities are adapted to enable all pupils, where possible, to engage with the learning intention.

Equal Opportunities

All children will be given equal access to the computing curriculum regardless of ability, race or gender. Class management takes account of such issues and appropriate resources. Differentiation and appropriateness of the task will give all children access to the curriculum.

Resources

The school has 40 laptops (within 3 charging trolleys); 35 Windows hybrid touchscreen laptops; 10 i-pads; a number of portable video cameras; 4 data loggers; still cameras and programmable floor turtles and bee-bots.

Additional equipment, such a crumble kits, will be added to this list in due course.

Glossary of Terms

Computer Science
The core of computing is computer science, in which pupils are taught the fundamental principles of information and computation, how digital systems work and how to put this knowledge to use through programming. It includes the concepts of abstraction, logic, algorithms and data representation.

Abstraction
Only focussing on the details relevant to the task, in computing this may be by using a database to handle data. In doing this the data can be looked at in specific groups.

Logic
The non-arithmetic operations performed by a computer, such as sorting, comparing, and matching, that involve yes-no decisions. This might be completed using programs containing spreadsheets eg Microsoft Excel

Algorithms
The step-by-step procedure for a machine to complete a task, for example the instructions given to a bee-bot to guide it round a track, or the instructions put into a bee-bot to guide it through a maze.

Data Representation
The way in which information is presented. In its simplest form this could be representing a data set as a graph. However it is also using the appropriate software for the task. Not everything has to be done in Word or PowerPoint.

Information Technology
Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content.

Digital Literacy
This is how children learn the skills to be able to find, sort, evaluate, manage and create information in digital forms.
This means being able to:
- Find sources of information by using search engines and other downloading platforms effectively
- Sort through information to identify the most relevant for the intended purpose
- Evaluate the value of the information by considering its reliability, credibility and authority
- Manage the information by understanding how to use it appropriately, eg understand that you cannot use others' work as your own
- download files in a legal and safe way
- use digital sites safely and wisely

Debug
The process by which a child evaluates programming eg a set of commands for the Bee-Bot, sees what went wrong and then works out how to rewrite the program so it works better a second time.