ST LUKE'S CE PRIMARY SCHOOL

CURRICULUM STATEMENT FOR COMPUTING

Curriculum Statement for Computing
To be read in conjunction with the Curriculum Policy

Subject Lead: Miss R. McGarvey

1 Aims

We are guided in our language teaching by the National Curriculum 2014, which states:

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.

2 What will pupils be taught?

Again, this is guided by the National Curriculum:

Pupils should be taught to:

<u>Key Stage 1</u>

- 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; identify 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

- 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 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; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

3 How will pupils be taught?

3.1 Computing is taught following an adapted version of the 'Teach Computing' scheme of work to ensure a full broad and balanced coverage of National Curriculum requirements from Year 1 to Year 6. Three strands run throughout:

- computer science
- information technology
- digital literacy

3.2 The computing scheme ensures that key concepts, skills and vocabulary are revisited and built upon through a spiral curriculum. This means pupils can develop their computing knowledge and skills by revisiting and building on previous learning. Units are taught each year: computing systems and networks, creating media, data and information and programming. Children are given opportunities to showcase their computing skills in other areas of the curriculum. E.g. during Year 2 geography lessons, children input their postcodes into Google Earth to locate their homes and examine maps of their local area.

3.3 Computing is taught from Year 1 through to Year 6. Computing in EYFS is centred around play-based activities, building on the children's listening skills, curiosity, creativity and problem-solving skills. Children in EYFS will explore technology in their everyday lives as they interact with a range of technology through classroom provision.

3.4 The curriculum is structured and sequenced, so that each unit builds upon the previous units and important vocabulary is frequently revisited, in order to ensure that children learn and remember more.

3.5 Children develop skills in computational thinking, digital literacy and online safety to ensure that they are responsible, competent, confident and creative users of information and communication technology, are able to understand fundamental principles of computer science and can analyse problems in computational terms.

4 Inclusion

4.1 In line with our ethos of inclusion, it is important that our ambitious Computing curriculum can be accessed and enjoyed by **all** pupils. We have the same learning intentions for all pupils, with no lowering of expectations.

4.2 Pupils with Special Educational Needs and / or Disabilities (SEND)

Just as in all other areas of the curriculum, for the delivery of Computing teachers need to anticipate barriers to participation for pupils with particular SEND. Planning will minimise those barriers so that all pupils can fully take part and learn.

For all pupils to be able to achieve the same learning intentions, it will be necessary to 'adapt teaching' to ensure access through the use of strategies such as:

- Breaking down content into smaller chunks or steps
- Varying levels of support, including effective support from TAs as well as the teacher, e.g. directing a TA to scaffold the learning for a specific pupil or group of pupils while ensuring that the development of the pupil's independence and their confidence in themselves as a learner is not compromised as a result
- Removing unnecessary expositions, i.e. keeping spoken language at an amount and at a level that will enable maximum access, with visual support
- Supporting different means of expression / methods of recording,
- Intervening appropriately, i.e. checking on the understanding after a whole class introduction, and providing access to key information to support the learning; observing when a pupil or group of pupils seems to be struggling with a new concept or idea, and creating opportunities to dig deeper into any misconceptions that may have arisen, before these have the chance to become entrenched

Similarly, when assessing pupils with SEND, an altered or alternative method of assessment may be appropriate.

4.3 Mastery

Exploratory tasks foster a deeper understanding of a concept, encouraging pupils to apply their learning in different contexts and make connections with other learning experiences.

5 Assessment and Reporting

5.1 The purpose of assessment should be to:

- ensure and evidence progression against the programme of study
- track progression of cohorts and individual pupils
- identify lack of progression in order to trigger catch-up strategies

5.2 Progression in the learning of Computing can be evidenced through:

a) Regular formative assessment

Every lesson includes formative assessment opportunities for teachers to use. These opportunities are listed in the lesson plan and are included to ensure that misconceptions are recognised and addressed if they occur. They vary from teacher observation or questioning, conversations with pupils, photographs to marked activities. Learning graphs are also provided as part of each unit and demonstrate progression through concepts and skills for each unit.

b) Regular summative assessment

In KS1, summative assessment is informed by teacher's ongoing formative assessment throughout a unit to assess if a pupil is working at the expected level for each unit: checking recall of key knowledge, vocabulary and skills from the unit in question. In KS2, each unit has a summative assessment opportunity in the form of a multiple choice quiz or a rubic. Summative assessment allows not only for the evidencing of progression, but also for identifying when progress is not being made, either at a class or individual level.

c) A portfolio of work to demonstrate knowledge and skills gained as a year group, throughout year. This may be through written activities or recorded through photographs or videos.

5.3 In line with the assessment policy, a verbal report may be given to parents in the autumn and spring parent-teacher meetings. A comment on Computing may form part of the full written report in the summer term where it is noted to be a particular strength or area for improvement.

6 Impact

As a result of high-quality Computing teaching, all pupils at St Luke's will:

- Show a clear progression of technical skills across all areas of the Computing National Curriculum- computer science, information technology and digital literacy.
- Be critical thinkers and able to understand how to make informed and appropriate digital choices for the future.
- Understand the importance that computing will have going forward in both their educational and working life and their social and personal futures.
- Understand that technology helps to showcase their ideas and creativity.
- Be able to use technology both individually and collaboratively as part of a collaborative team.
- Understand how networks can be used to retrieve and share information, and how they come with associated risks
- Understand what a computer is, and how its constituent parts function together as a whole
- Select and create a range of media including text, images, sounds, and video
- Understand how data is stored, organised, and used to represent real-world artefacts and scenarios
- Understand the activities involved in planning, creating, and evaluating computing artefacts
- Use software tools to support computing work
- Understand how individuals, systems, and society as a whole interact with computer systems
- Create software to allow computers to solve problems
- Understand risks when using technology, and how to protect individuals and systems

7 Subject delivery monitoring

The school's Computing lead has responsibility for the implementation of the schemes, the quality of teaching, and levels of pupil progress and achievement. Monitoring the quality of delivery and outcomes can comprise:

- lesson visits

- oversight of planning
- scrutiny of pupils' work
- discussion with teachers
- discussion with pupils

These activities also ensure the Computing lead is well-placed to identify any CPD needs.

Rachel McGarvey
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