Computing at St Leo's and Southmead

Computing plays an important part in our school life. The children have access to a broad and balanced curriculum with one of the subjects being computing. As well as this being taught as a discrete subject it is also used to support/ deliver other areas of the curriculum.

Internet Safety plays an important part in our teaching throughout the key stages and is re-visited a number of times each year. This ensures the children become responsible on the internet and are aware of the possible consequences if they behave in appropriately. We also use 'Internet Safety Day' as an extra opportunity to deliver these aims and objectives.

The characteristics of Computing can be seen below.

- Competence in coding for a variety of practical and inventive purposes, including the application of ideas within other subjects.
- The ability to connect with others safely and respectfully, understanding the need to act within the law and with moral and ethical integrity.
- An understanding of the connected nature of devices.
- The ability to communicate ideas well by using applications and devices throughout the curriculum.
- The ability to collect, organise and manipulate data effectively.

National Curriculum 2014 states that:

"A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world."

The objectives that are covered in each Key Stage are as follows:

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 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

Pupils should be taught 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 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.

The topics covered in each year group along with the objectives are listed below.

Year 1

Topics – We are all Connected, Young Investigators, Walking with Dinosaurs , Crazy Creatures, App Attack - Games Design, Pictures Tell a Thousand Words

- Recognise common uses of information technology beyond school
- Use technology purposefully to create, organise, store, manipulate and retrieve digital content
- 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
- 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

Year 2

You've got mail, Whatever the Weather , Code-tastic, Super Sci-Fi, Let's Fix IT, Young Authors

- Recognise common uses of information technology beyond the school
- Use technology purposefully to create, organise, store, manipulate and retrieve digital content
- 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 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
- Use search technologies effectively
- 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

Year 3

Big Robots, Get Blogging, We love Games, Class Democracy, My First Program, We are Publishers

- 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
- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact
- Use search technologies effectively
- 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
- Understand the opportunities [networks] offer for communication and collaboration
- Be discerning in evaluating digital content

Year 4

Back to the Future, We built this city, Making Games, Hurray for Hollywood, Interface Designer, Final score

- 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
- Appreciate how [search] results are selected and ranked
- Use search technologies effectively
- 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
- Understand the opportunities [networks] offer for communication and collaboration

- Be discerning in evaluating digital content
- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

Year 5

Cars , News Room, Codebreakers , Interactive Art Exhibition, Web Site Designers , Let's change the world: Inventors

- 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
- Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web
- Use search technologies effectively
- 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
- Understand the opportunities [networks] offer for communication and collaboration
- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

Year 6

Let's learn a language, Heroes & Villains, Graphics Appy Times Pt 1, Stocks and shares, Appy Times Pt 2, Young Authors

- 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 search technologies effectively
- 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

Resources

Our school has a number of resources to support the teaching and learning of Computing. These include :

Laptops
iPads (12 plus 10 hired)
Computer suite
Classroom with intergrated computers
Smartboards
Cameras
Video cameras
Listening centres
Bee bots
Pro bots

The children are assessed at the end of each topic using the National Curriculum 2014 and the Chris Quigley Essentials curriculum. These assessments will help to inform future planning.