

Computing Progression of skills

National Curriculum objectives: KS1.	
All pupils should: - understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation - analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems - evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems - be responsible, competent, confident and creative users of information and communication technology.	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. Examples of Key Skills/ Concepts: - Using a 'Paint Program' - Using photo story - Programme Bee bots, on-screen control program - Simple publishing eg greetings card - Simple Pictograms - Circuits - Internet and safe usage - Powerpoint - Simple databases/ decision trees.

Computing Progression of skills

National Curriculum objectives: Lower KS2.

All pupils should:

- understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- be responsible, competent, confident and creative users of information and communication technology.

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.

Examples of Key Skills/ Concepts:

- Control/ programming, Logo Lego etc
- Use of Internet e mail Podcasts etc
- Computer games
- Databases
- Powerpoint
- School Website blog
- Publisher
- Animation Scratch and stop motion
- Datalogging
- Branching databases

Computing Progression of skills



National Curriculum objectives: Upper KS2.	
All pupils should: - understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation - analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems - evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems - be responsible, competent, confident and creative users of information and communication technology.	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. Examples of Key Skills/ Concepts: - Control/ programming, Lego etc - Online Safety - Creating a game (scratch) 3D Structures - Spreadsheets, using excel - Film making - Control and Monitoring - Social Media