THE RADSTONE
Primary School

LONG TERM PLANNING
Key Stage 2 Computing

The Purpose of Study

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 technology and provides insights into both natural and artificial systems. At the core of computing is computing science, in which pupils are taught the principals of information and computation, how design systems work, and how to put this knowledge to use through programming. Building on all of this, children are equipped to use IT to create programs, systems and a range of content. Computing also ensures that children become digitally literate – able to use and express themselves and develop their ideas through computing – at a level suitable for the future workplace and as active participants in a digital world.

Aims of study

That all children:

- 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 IT, including new or unfamiliar technologies, analytically to solve problems.
- Are responsible, competent, confident and creative users of computing technology.

	Autumn	Spring	Summer
Year 3	**We are who we are** – creating presentations about ourselves.	**We are Programmers** – programming an animation. **We are Bug Fixers** – finding and correcting bugs.	**We are Presenters** – videoing a presentation against a green screen.
Year 4	**We are Software Developers** – developing a simple educational game. **We are Makers** – coding a micro:bit	**We are Musicians** – creating a piece of music in GarageBand. **We are Bloggers** – sharing experiences and opinions.	**We are Artists** – fusing geometry and art. **We are Meteorologists** – presenting the weather.
Year 5	**We are Game Developers** – developing an interactive game.	**We are Architects** – creating a virtual space.	**We are Adventure Gamers** – creating an interactive adventure using presentation software.
Year 6	**We are Toy Makers** – coding and physical computing. **We are Computational Thinkers** – mastering algorithms for searching, sorting and maths.	**We are Publishers** – creating a yearbook or magazine. **We are Connected** – developing skills for social media.	**We are Advertisers** – creating a short television advert. **We are AI Developers** – learning about artificial intelligence and machine learning.

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Coverage

Key Stage 2 Computing

Year 3	Year 4	Year 5	Year 6
We are Programmers: • To design, write and debug programs that accomplish specific goals, including controlling physical systems. • To sequence, select and repeat in programs. • To use logical reasoning to explain how some simple algorithms work to detect and correct errors in algorithms and programs. **We are Bug Fixers:** • To solve problems by decomposing them into smaller parts. • To work with variables and various forms of input and output. • To use technology safely and respectfully. **We are Presenters:** • To create a range of programs, systems and content that accomplish given goals, including collecting, analysing and evaluating data.	**We are Software Developers and We are Makers:** • To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems. • To solve problems by decomposing them into smaller parts. • To use sequence, selection and repetition in program. • To work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work to detect and correct errors in algorithms and programs. **We are Musicians:** • To select, use and combine a variety of software on a range of digital devices to design. • To use technology safely and respectfully. • To recognise acceptable and unacceptable behaviour. • To identify a range of ways to report concern and contact.	**We are Game Developers** • To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems. • To solve problems by decomposing them into smaller parts. • To use sequence, selection and repetition in program. • To work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work to detect and correct errors in algorithms and programs. • To use technology safely and respectfully. • To recognise acceptable and unacceptable behaviour. • To identify a range of ways to report concern and contact. **We are Architects:** • To select, use and combine a variety of software on a range of digital devices to design and create a range of programs,	**We are Toy Makers and We are Computational Thinkers:** • To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems. • To solve problems by decomposing them into smaller parts. • To use sequence, selection and repetition in programs. • To work with variables and various forms of input and output. • To use logical reasoning to explain how some simple algorithms work to detect and correct errors in algorithms and programs. **We are Publishers:** • To understand computer networks including the internet and how they can provide multiple services, such as the World Wide Web. • To understand the opportunities, they offer for communication and collaboration. • To select, use and combine

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We are who we are: • To select, use and combine a variety of software on a range of digital devices for a design. **We are Co-Authors:** • To understand computer networks, including the Internet. • To understand how networks can provide multiple services such as the World Wide Web. • To search technologies effectively and appreciate how results are selected and ranked. • To be discerning in evaluating digital content. • To use technology safely and respectfully. • To recognise acceptable and unacceptable behaviour. • To identify a range of ways to report concern and contact. **We are Opinion Pollsters:** • To understand computer networks including the internet. • To understand how they can provide multiple services, such as the World Wide Web and the opportunities they can offer for communication and collaboration. • To select, use and combine a variety of software on a range of digital devices for design. • To create a range of programs, systems and content that accomplish given goals	**We are Bloggers:** • To use technology safely and respectfully. • To recognise acceptable and unacceptable behaviour. • To identify a range of ways to report concern and contact. • To understand computer networks, including the Internet. • To understand how networks can provide multiple services such as the World Wide Web. • To understand the opportunities, they offer for communication and collaboration. • To be discerning in evaluating digital content. **We are Artists:** • To search technologies effectively and appreciate how results are selected and ranked. • To create a range of programs, systems and content that accomplish given goals. **We are Meteorologists:** • To select, use and combine a variety of software of a range of digital devices to design. • Create a range of programs, systems and content that accomplish given goals including collecting, analysing, evaluation and presenting data and information.	systems and content that accomplish given goals. **We are Adventure Gamers:** • To select, use and combine a variety of software on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals including collecting, analysing and evaluating data. • To use technology safely and respectfully. • To recognise acceptable and unacceptable behaviour. • To identify a range of ways to report concern and contact.	a variety of software on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals. • To use technology safely, respectfully and responsibly. • To recognise acceptable and unacceptable behaviour. • To identify a range of ways to report concerns about content and contact. **We are Connected:** • To understand computer networks including the internet and how they can provide multiple services, such as the World Wide Web. • To understand the opportunities, they offer for communication and collaboration. • To search technologies effectively and appreciate how results are selected and ranked. • To be discerning in evaluating digital content. **We are Advertisers:** • To design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presented data and information. • To use technology safely, respectfully and responsibly. • To recognise acceptable and

including collecting, analysing, evaluating and presenting data and information. • To use technology safely and respectfully. • To recognise acceptable and unacceptable behaviour. • To identify a range of ways to report concern and contact.			unacceptable behaviour. • To identify a range of ways to report concerns about content and contact. **We are AI Developers:** • To design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presented data and information.