Inspiring Excellence Our days are always filled with MAGIC

Context

   Our computing curriculum, following the national curriculum, is defined by exploration, hands on practice, gumption, motivation and creativity. As the American philosopher and educator John Dewey wrote in 1887: "*We learn by doing*".

   Technology is here to stay and it's continuously evolving. Despite the effects of the global pandemic in education, in our curriculum, we provide to our pupils and our school's diverse community equal opportunities to access technologies and computing skills of everyday life using industry standard software and hardware. In addition, our curriculum assures the online safety of our pupils by providing knowledge on many important topics such as the Dark Web, personal data, phishing, Hacking, Grooming and Radicalization.

   Additionally, our Culture capital provides our pupils chances to develop their skills further through after school clubs and educational visits to companies, where pupils see the professional use of computing and various technologies first hand. Among other daily life technologies that we teach about, AI is the one most evolving currently. Despite its rapid evolution, our curriculum teaches our students to be independent and think on their own, while using computers and AI only as a tool to achieve and evaluate their desired results faster. As Einstein said: "*Computers are incredibly fast, accurate, and stupid. Human beings are incredibly slow, inaccurate, and brilliant. Together they are powerful beyond imagination*".

   The scope of our curriculum is for our students to be problem solvers, ready to face any challenges and grasp any opportunities given as modern British citizens, and citizens of the 21st-century world.

Intent	Implementation	Impact
We aim to widen pupil's experience of a range of devices and modern technologies, in order they are literate and able to	The implementation takes place bi-termly, using the Learning journeys, for every term. The curriculum, is divided in three themes which	Pupils gain an in - depth knowledge on various topics of computing, especially around using computing as a tool to code, collect

communicate effectively using computing terminology across a range of operating systems, while also enabling SEN children to have equal access to computing, ensuring that they are making good progress relative to their starting point.

We want them to have a solid understanding of online safety, and how to keep themselves safe while being online or using a computer/digital device.

We wish that by the end of their primary school journey, our pupils will be secondary ready, able to perform various computing related tasks, such as Coding, eBook creation, Website creation, Video/Audio Editing and VFX creation.

reflect the Computer Science, Digital Literacy and Information Technology of the National Curriculum, with progression of skills on relevant topics each term across all year groups from EYFS to Year 6:
- **Coding** in Autumn term
- **Data Science and text editing** in Spring term
- **Media creation** in the Summer term.

The lessons are taught by a specialist and are tailored to everyday life and use.

Online safety is taught every term, presenting a different topic each time. Links to real, everyday life examples are made to address online safety topics, using NSPCC resources and examples found online (such as age appropriate YouTube videos)

We are teaching our pupils what is "out there", by providing hands-on experience with computing and ICT hardware, i.e., cameras, robots, microphone, mixing console, etc. Additionally, computers with industry-used software such as Google Docs, Photoshop, Blender,DaVinci Resolve and Blackmagic Fusion are already in place and ready to be used in every class, including dedicated computers for SEN pupils.

The teaching of each lesson is adapted according to the pupils' possibilities and level of understanding.

information, create and communicate ideas. By the end of the year our pupils achieve age-related expectations and demonstrate literacy and computing through use of a range of hardware and software, and show confidence in their use of computing specific vocabulary. Also disadvantaged and SEN pupils gain access and knowledge to modern technologies, understanding how they work and by improving their skills in using them.

Pupils at the end of their primary career are secondary ready, having acquired the necessary knowledge and skills through hands-on practice with industry standard software and by participating in various school projects.

Subject Coverage

	Autumn	Spring	Summer
Nursery	**First steps in coding** Begins to understand the beginnings of coding through programmable toys like Beebots - begins to realise that a digital instruction can result in an outcome.	**Online Safety** Learning to keep myself safe in a variety of situations - link to strange Danger and online safety. **Computing basic skills** Identify different computer devices and parts of a computer (phone, tablet, mouse, keyboard, screen, computer (case)	**Online Safety** Beginning to understand false information **Create with technology** Can use age appropriate programmes with confidence and skill on a range of resources (cameras, tablets, interactive whiteboard etc)
	Reference to EYFS (Development Matters): ● *Understanding the world: Past and Present* - *Know some similarities and differences between things in the past and now, drawing on their experiences and what has been read in class* ● *Expressive Arts and Design: Creating with Materials* - *Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function*		
Reception	**Online Safety** Beginning to understand a safe website **First steps in coding** Begins to understand the beginnings of coding through programmable toys like Beebots - begins to realise that a digital instruction can result in an outcome.	**Online Safety** Learning to keep myself safe in a variety of situations - link to strange Danger and online safety. **Computing basic skills** Identify different computer devices and parts of a computer (phone, tablet, mouse, keyboard, screen, computer (case)	**Online Safety** Beginning to understand false information **Create with technology** Can use age appropriate programmes with confidence and skill on a range of resources (cameras, tablets, interactive whiteboard etc) Follow simple commands Understand what a sequence is
	Reference to EYFS (Development Matters): ● *Understanding the world: Past and Present* - *Know some similarities and differences between things in the past and now, drawing on their experiences and what has been read in class* ● *Expressive Arts and Design: Creating with Materials* - *Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function*		
Year 1	● **Online Safety - *Personal Data, Secure/not secure websites***	● **Online Safety - *Phishing*** ● **Computing basic skills**	● **Online Safety - *Online abuse/bullying*** ● **Green screen forecasting**

	• **Giving instructions – coding – Beebots (creating a route home)**		
	Reference to NC: **CS:** • *Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions* • *Use logical reasoning to predict the behaviour of simple programs* **DL:** • *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*	*Reference to NC:* **CS:** • *Use logical reasoning to predict the behaviour of simple programs* **DL:** • *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* • *Recognise common uses of information technology beyond school* **IT:** • *Use technology purposefully to create, organise, store, manipulate and retrieve digital content*	*Reference to NC:* **DL:** • *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* **IT:** • *Use technology purposefully to create, organise, store, manipulate and retrieve digital content*
Year 2	• **Online Safety- *Phishing in depth*** • **Coding – Bluebots – mapping skills**	• **Online Safety - *Safe internet browsing , awareness of spamming*** • **Ebook creation, focussed upon animals & plants**	• **Online Safety - Safe *Usage of personal data online*** • **Stop frame animation (paper) - Fire of London or another topic**
	Reference to NC: **CS:** • *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* **DL:**	*Reference to NC:* **CS:** • *Use logical reasoning to predict the behaviour of simple programs* **IT:** • *Use technology purposefully to create, organise, store, manipulate and retrieve digital content* **DL:** • *Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they*	*Reference to NC:* **CS:** • *Use logical reasoning to predict the behaviour of simple programs* **IT:** • *Use technology purposefully to create, organise, store, manipulate and retrieve digital content* **DL:** • *Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have*

		have concerns about content or contact on the internet or other online technologies ● *Recognise common uses of information technology beyond school*	*concerns about content or contact on the internet or other online technologies* ● *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**		
Year 3	● **Online Safety - *Grooming*** ● **Coding-Scratch – fact information based on plants**	● **Online Safety - *Social Apps, safe use*** ● **Information posters**	● **Online Safety - *Risks with Video Games*** ● **Stop frame animation – Lego/plasticine**
	Reference to NC: **CS:** ● *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* **DL:** ● *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact* ● *Be discerning in evaluating digital content*	*Reference to NC:* **CS:** ● 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 **IT:** ● 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 **DL:** ● Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact ● Be discerning in evaluating digital content	*Reference to NC:* **CS:** ● Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs **IT:** ● 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 **DL:** ● Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact ● Be discerning in evaluating digital content
Year 4	● **Online Safety - *Spamming*** ● **Coding-Game creation using Scratch**	● **Online Safety - *Innapropriate/age appropriate content online*** ● **Data science, data analysis and data interpretation(Link to RE or PSHE)**	**Online Safety - *Malware*** ● **BandLab (Audio programming) tied to carnival country**
	Reference to NC **CS:** ● *Design, write and debug programs that accomplish specific goals, including controlling or*	*Reference to NC:* **CS:**	*Reference to NC:* **CS:** ● Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs

	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* *DL:* ● *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact* ● *Be discerning in evaluating digital content* ● *Understand the opportunities networks offer for communication and collaboration*	● *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* ● *Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web* *IT:* ● *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* *DL:* ● *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact* ● *Be discerning in evaluating digital content*	*IT:* ● 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 informatio*n* *DL:* ● Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact ● Be discerning in evaluating digital content
Year 5	● **Online Safety - *Malware in depth*** ● **Coding - AI - Oh bots – exploring danger zones**	● **Online Safety - Tracking cookies** ● **Ebook creation using InDesign – (Link to Science or PE)**	● **Online Safety - Safe Search online, Ethical/non-ethical hacking** ● **Vlogging/Video Editing: Creating a promotional video**
	Reference to NC *CS:* ● *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* *IT:* ● *Use search technologies effectively* *DL:* ● *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable*	*Reference to NC* *CS:* ● *Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs* *IT*: ● *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* *DL:* ● *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour;*	*Reference to NC* *CS:* ● *Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs* *IT:* ● *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* *DL:* ● *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour;*

	behaviour; identify a range of ways to report concerns about content and contact ● *Be discerning in evaluating digital content*	*identify a range of ways to report concerns about content and contact* ● *Be discerning in evaluating digital content* ● *Understand the opportunities networks offer for communication and collaboration*	*identify a range of ways to report concerns about content and contact* ● *Be discerning in evaluating digital content*
Year 6	● **Online Safety - *Hacking and Ethical hacking*** ● **Website creation**	● **Online Safety - *Deep and Dark Web*** ● **History of Computers, Computer Hardware**	● **Online Safety - Radicalization - Troll** ● **VFX (3D Modelling and Compositing)**
	Reference to NC **CS:** ● 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 **IT:** ● 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 **DL:** ● Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact ● Be discerning in evaluating digital content	***Reference to NC*** **CS:** ● Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web ● Appreciate how search results are selected and ranked **IT:** ● 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 **DL:** ● Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact ● Understand the opportunities networks offer for communication and collaboration	***Reference to NC*** **CS:** ● Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs ● Use sequence, selection, and repetition in programs; work with variables and various forms of input and output **IT:** ● 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 **DL:** ● Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact ● Be discerning in evaluating digital content ● Understand the opportunities networks offer for communication and collaboration

Enrichment/Cultural Capital

Give opportunities to pupils to be as creative as possible and to express their ideas to the rest of the class, as well as in school projects and assemblies.

Real life link and visits to ICT professionals, external agencies and companies, as well as companies that work in blockbuster films and productions, such as **One of Us (VFX and Animation Studio)**

Our Digital Leader visit BETT and other technology exhibitions

International Computing and Online Safety Day

Participating in in-school and external performances and visiting ICT related venues and museums

After school clubs:
- Film and YouTube Club

Nursery Essential Knowledge	Reception Essential Knowledge
- Begins to understand false information **(DL)** - Can identify different computer devices and parts (smartphone, tablets, laptop, desktop, keyboard etc.) **(DL) (IT)** - Can use age appropriate programmes with confidence and skill on a range of resources (cameras, tablets, interactive whiteboard etc) **(IT)**, **(CS)**	- Begins to understand false information **(DL)** - Beginning to understand when a website is safe **(DL)** - Can identify different computer devices and parts (smartphone, tablets, laptop, desktop, keyboard etc.) **(DL) (IT)** - Can use age appropriate programmes with confidence and skill on a range of resources (cameras, tablets, interactive whiteboard etc) **(IT)** - begins to realise that a digital instruction can result in an outcome **(CS)**
Year 1 Essential Knowledge	**Year 2 Essential Knowledge**
- Has a basic understanding of what is false information a.k.a. Phishing, as well as how to identify a secure from non-secure website **(DL)** - Understands what is an algorithm **(CS)** - Is able to use a sequence of commands/ instructions to create code for a specific route **(CS)** - Knows and identifies various forms of computer and how they are used (desktop, laptop, tablet, smartphone) **(DL) (IT)** - Understands what is green screen and how and where it is used **(IT)**	- Understands what is phishing, how to use personal data safely online and has a basic understanding of spamming **(DL)** - Understands what is sequence and repetition in coding **(CS)** - Understands what is wireless connection and how to use it to give instructions to a robot to move to a specific direction. **(CS)** - Can use a text editor with/without photo editing to create a simple eBook **(DL) (IT)** - Understands what is Stop motion and how it is done using paper **(IT)**

Year 3 Essential Knowledge	Year 4 Essential Knowledge
- Understands what is grooming, how to use safely social apps and what risks exist with video games **(DL)** - Can describe what is a binary system, what is a programming language and can code in a block-based programming environment such as Scratch. **(CS)** - Understands what is a poster and how to create using image editing/photo manipulation software. **(IT)** - Understands what is Stop motion and how it is done using lego or any object **(IT)**	- Understands what is spamming, age appropriate content and has a basic idea about malware. **(DL)** - Can describe how a video game is made, and can name software used for game creation **(CS) (IT)** - Understands what is data science and can describe its applications **(CS) (IT)** - Can use spreadsheet software to gather data and create pie charts and bar graphs **(CS) (IT)** - Can use music software (DAW) to create a simple song. **(IT)**
Year 5 Essential Knowledge	Year 6 Essential Knowledge
- Understands what is malware, tracking cookies, and has a basic idea about hacking and ethical hacking. **(DL)** - Understands what AI is, and can code a robot to move, talk and create facial expressions. **(CS)** - Understands the process of an eBook creation, and can use professional software and photo manipulation techniques to create a simple eBook. **(IT) (DL)** - Understands what video editing is and how it is done **(IT)**	- Understands what is hacking and ethical hacking, the Deep and Dark Web, and what we call troll and radicalization. **(DL)** - Can describe what web design is and how to create a website using professional software. **(CS)** - Has a basic understanding of the history of computers. **(DL)** - Can name / recognise the internal hardware parts of a computer and can virtually build a computer from scratch. **(CS)** - Understands what are Visual Effects (VFX) and can use professional software to create a VFX shot (modelling, texturing, lighting, rendering, compositing). **(IT)**