- For all children to have an understanding of how to use a wide range of technology (including an understanding of how it works) in an increasingly technological world.

Curriculum aims:

KS1:

To understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions

To create and debug simple programs

To use logical reasoning to predict the behaviour of simple programs

To use technology purposefully to create, organise, store, manipulate and retrieve digital content

To recognise common uses of information technology beyond school

To 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

KS2:

To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts

To use sequence, selection, and repetition in programs; work with variables and various forms of input and output

To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs

To 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

To use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content

To 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

To use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Computing is split into three key skill areas:

Digital literacy and online safety (DL)

Computational thinking (CT)

Computers and hardware (CH)

The Kapow scheme of work is always evolving and therefore the plans do sometimes change. For the most up-to-date version visit:
https://www.kapowprimary.com/featured_documents/computing-long-term-plan-standard/

Further suggested vocabulary is available from the below link:
https://www.kapowprimary.com/featured_documents/computing-key-vocabulary/

Deep Roots	Autumn		Spring		Summer		Key vocabulary
	Skills	Knowledge	Skills	Knowledge	Skills	Knowledge	
Y1

Autumn -
Online Safety (DL), Computing systems and networks (CH and DL) and beebots (CT)

Spring –
Algorithms unplugged (CT) and digital imagery/online safety (DL, CH and CT)

Summer –
Introduction to data (DL and CH) and rocket to the moon (DL) | To be able to log in and save work on their own account.

To recognise common uses of information technology.

To understand how to create digital art using an online paint tool.

To learn to locate where keys are on the keyboard. Developing basic mouse skills. | To know how to be considerate when online and be careful of what we post online.

To know that an algorithm is an instruction. | To understand how to create algorithms.

To begin to know how to break a computational thinking problem into smaller parts in order to solve it.

To use cameras or tablets to take photos

To use logical reasoning to predict the behaviour of simple programs. | To understand how to create algorithms.

To know that computers need information to be presented in a simple and clear way.

To know what to do if we have concerns about content or contact online. | To select software appropriately.

To begin to use technology purposefully to create, organise, store, manipulate and retrieve digital content. | To know that we can use technology for activities outside of school. | click, mouse, personal information, respect, sharing, order, document, edit, save, share, device, download, photograph, sort, values |

| Y2

Autumn –
Online safety (DL), What is a computer? (CT and CH) and word processing (DL)

Spring –
Programming scratch jr (CT and DL) and algorithms debugged (CT)

Summer –
International space station(DL and CT) and stop motion (DL and CH) | To understand what a computer is and the role of individual components.

To use word processing software to type and reformat text. | To know what inputs and outputs are and how they are used in algorithms.

To know the importance of staying safe online. | To use logical reasoning to predict the behaviour of simple programs.

To understand how algorithms are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. | To know how to create and debug simple programs.

To know what algorithms are. | To use technology to create and label images and to put information into a spreadsheet.

To consider inputs and outputs to understand how sensors work. | To know how to use tablets or computers to take photos.

To know how to put data into a spreadsheet. | computer, desktop, mouse, screen, loop, backspace, bold, home row, home screen, keyboard, text, touch typing, underline, blocks, icon, animation, data, consent, password, permission, personal information |

| Y3

Autumn –
Online Safety (DL), Emailing (DL) and journey through a computer (CH and CT)

Spring –
Top trump databases (DL) and digital literacy (DL)

Summer –
Programming scratch (CT) and networks (CH) | To understand what different components of a computer do.

To understand that programs execute by following precise and unambiguous instructions. | To know what cyberbullying and fake emails are.

To know the purpose of emails. | To select, use and combine a variety of software to design and create a range of programs, systems and content that accomplish given goals. | To know that technology can be used to create, store, manipulate and retrieve data through databases. | To design, write and debug simple programs.

To use logical reasoning to explain how simple algorithms work.

To use sequence, selection, and repetition in programs.

To identify network components and how data is transferred. | To know what variables, inputs and outputs are and that they are used in algorithms.

To know that problems can be broken down into smaller parts. | network, web server, website, cyberbullying, email, email address, hard drive, memory, touchscreen, clip, graphics, sound effects, voiceover, fields, filter, age restricted, fact, opinion, fake news |
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Deep Roots

Y4 Autumn – Online Safety (DL) Collaborative learning (DL) and the internet (DL and CH) Programming with Scratch (CT) Spring - Website design (DL) and HTML (DL and CT) Summer – Investigating weather (DL and CT) and computational thinking (CT)	To identify components of a network and understand how they used to connect to the Internet. To use technology safely, by recognising acceptable/unacceptable behaviour.	To know that the World Wide Web can help us to communicate and work together. To know that information on the Internet might not be true or correct. To know what to do when they have concerns about content or contact online. To know that you can use software (Scratch) to program an outcome.	To select, use and combine a variety of software to design and create a range of programs, systems and content that accomplish given goals. To design, write and debug programs that accomplish specific goals. To solve problems by decomposing them into smaller parts.	To know that websites can be altered by exploring the code beneath the site. To know that problems can be solved by breaking them down in to smaller parts.	To understand abstraction and pattern recognition. To design, write and debug programs that accomplish specific goals.	To know the role of inputs and outputs in computerised devices. To know why some sources are more trustworthy than others. To know what decomposition is and how it facilitates problem solving. To know what abstraction and pattern recognition mean.	collaboration, block code, parameters, position, sprite, hyperlinks, webpage, WWW (World Wide Web), Google Sites, homepage, computational thinking, logical reasoning, input, output, pattern recognition, hashtag, screen time, search results, HTML
Y5 Autumn – Online Safety (DL) and Micro:bit (CH and CT) Spring – Search engines (DL)and sonic PI (DL and CT) Stop motion (CH, CT) Summer –	To use technology safely, by recognising acceptable/ unacceptable behaviour. To use block coding to program a device, including variables. To understand how external	To know that information on the Internet might not be true or correct. To know what to do when we have concerns about content or contact online.	To learn how to use search technologies effectively, appreciating how results are selected and ranked, and being discerning in evaluating digital content. To use programming	To know how to use keywords to quickly find accurate information. To know that different software can be used to complete different tasks.	To know how image data is transferred. To develop CAD skills.	To know that computer networks (including the internet) can provide many services and help us to collaborate and communicate. To know that computers transfer data in binary and	data leak, index, keywords, binary code, boolean, byte, systematic, Micro:bit, animator, character, fluid movement, frame, still image, 3D, binary image, CAD, "Fetch, decode, execute", JPEG, pixels, app permissions,

Deep Roots

Mars Rover 1 and 2 (CH and DL)	devices can be programmed by a separate computer.		language to create music, including use of loops. To use a variety of variety of software to design and create a range of programs.			understand simple binary addition.	bullying, strong password
Y6 Autumn – Online Safety (DL) Computing systems and networks: Bletchley Park (CT) Creating media: History of computers (CH) Bletchley park 1 and 2 (DL, CH and CT) Spring – Intro the python (CT) and big data 1 (DL and CH) Online Safety (DL) Summer – Big data 2 (DL) and showcasing skills(DL, CT and CH)	To use searching and word processing skills to create a presentation. To use programming software to understand hacking, relating this to computer cracking codes in WWII. To edit sound recordings for specific purpose. To learn about the history of computers and how they evolved over time.	To understand the importance of secure passwords	To solve problems by decomposing them into smaller parts. To design, write and debug programs that accomplish specific goals. To understand how data can be stored. To understand how learning can be applied to a real world context. To learn about online reputations and how to create a positive one. To be able to capture a screen	To know that websites can be altered by exploring the code beneath the site. To know the steps to take if you witness online bullying. To know how barcodes and QR codes work. To be aware of threats that face us online such as scammers and phishing emails.	To use a variety of variety of software to design and create a range of programs, systems and content to collect, analyse, evaluate and present data. To use computational thinking skills to design and debug programs, using different inputs and outputs.	To know how search engines work and how to use them safely and effectively.	acrostic code, cipher code, indentation, barcode, chips, gigabyte, kilobyte, megabyte, hardware, debugging, antivirus, biometrics, financial information, malware, software updates, two factor authentication, screen grab

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			grab on various devices.				

We have identified the most crucial knowledge that we want to ensure all children know in each year group. These are called our 'Golden Nuggets'. These are identified by a golden box around the statement.