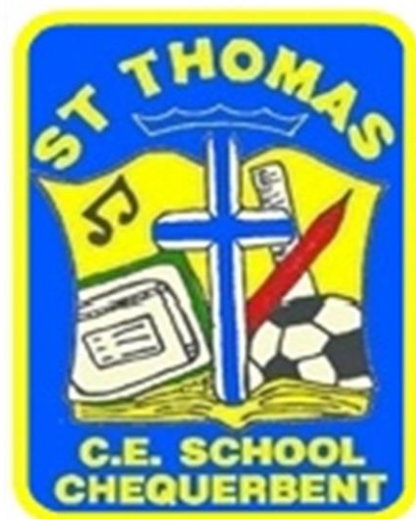


St Thomas C.E. Primary School

Chequerbent



Computing Overview

Date: November 2024

Let Your Light Shine in the Glory of God ✝

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At St Thomas we provide a nurturing, inclusive, Christian community, where everyone can flourish and achieve their full potential with confidence. We aim to be the best that we can be, to grow and to be beacons of light and hope for others, in school, in church, in the community and the wider world. Let your light shine.

Our vision is inspired by the teachings of Jesus, on the Sermon of the Mount, in the Gospel of Matthew "You are the light of the world. A city built on a hill cannot be hid. No one after lighting a lamp puts it under a bushel basket, but on the lampstand, and it gives light to all in the house. In the same way, let your light shine before others, so that they may see your good works and give glory to your Father in heaven"

Matthew 5:16-16

Computing programmes of study: key stages 1 and 2

National curriculum in England

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

Aims

The national curriculum for computing aims to ensure that all pupils:

- 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 information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology.

Attainment targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Subject content

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.

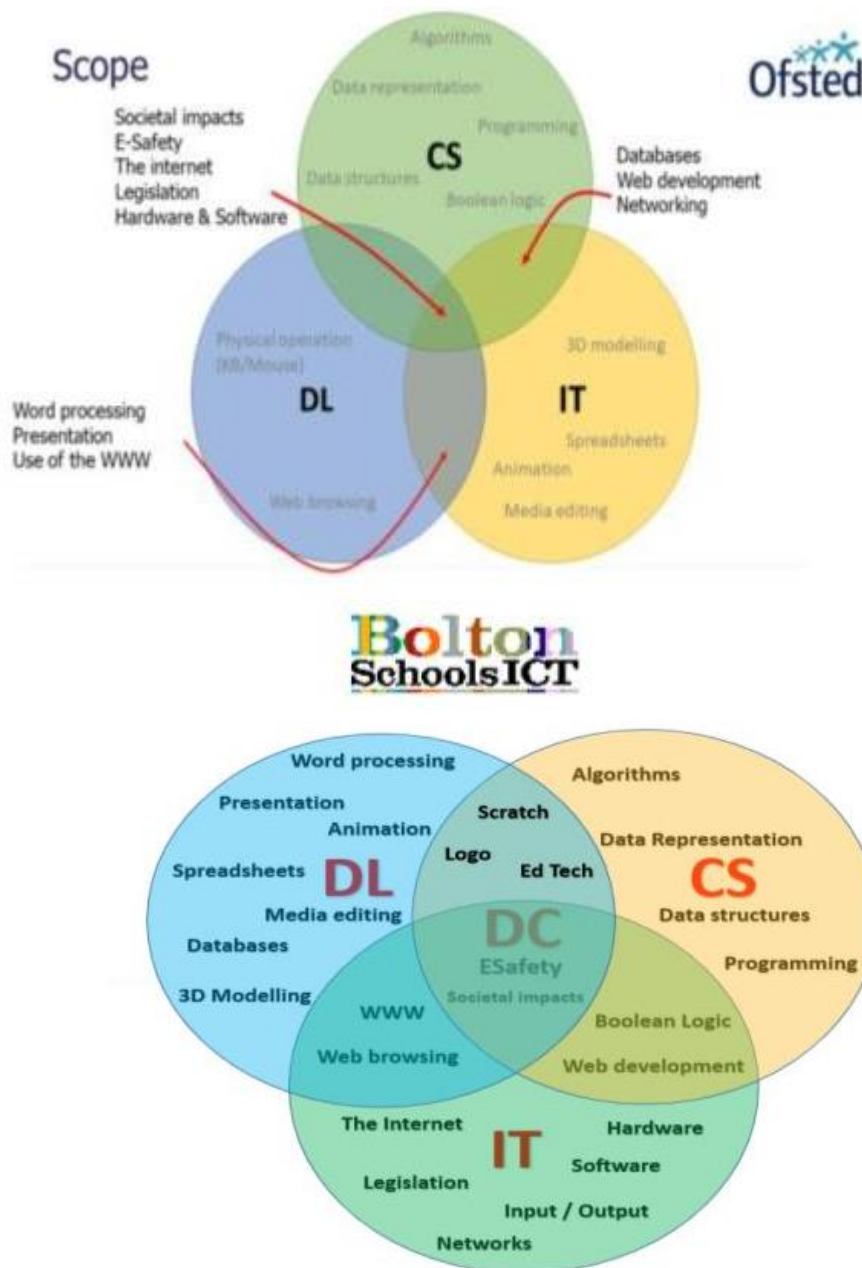
Key stage 2

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.

Computing Curriculum Overview

The National Computing curriculum has three focused strands: Computer Science, Digital Literacy and Information Technology. In this toolkit, the development team wanted to raise the profile of online safety and have expanded the strands to include a fourth strand Digital Citizenship. Bolton SICT have adopted and incorporated the Education for a Connected World framework into the teaching of Digital Citizenship and PHSE across all year groups. It should be noted that this toolkit defines digital literacy and information technology differently to OFSTED, refer to the infogram below.



Strands within the Computing Curriculum

What is Digital Citizenship?	What is Digital Literacy?
Children need to examine the consequences of their online activity—both good and bad. When teaching Digital Citizenship it is vital that we thoroughly embed the principles of staying safe online and then move onto web content and how they interact with it. It is important to use real world examples with our children to ensure that their learning is relevant to their life experiences. There are five key aspects of online education, adopted and incorporated from the Education for a Connected World framework, focalised within the teaching of Digital Citizenship. These are: Self-image and identity, online relationships, online reputation, online bullying, health, well-being and lifestyle. 	Digital Literacy is essentially how to use a whole host of different software. Having high levels of Digital Literacy enables us to decide which software we need to complete any given task, how to transfer skills and ultimately, be confident when using software. The essential component of digital literacy when it comes to the field of pedagogy is deep learning; of which there are six core skills: • Collaboration: The ability to work collaboratively with others, with strong interpersonal and team-related skills. • Creativity: Being able to weigh up opportunities in an entrepreneurial manner and ask the right questions to generate new ideas. • Critical thinking: Being able to evaluate information and arguments, identify patterns and connections, and construct meaningful knowledge and apply it in the real world. • Citizenship: The ability to consider issues and solve complex problems based on a deep understanding of diverse values and a worldview. • Character: Traits such as grit, tenacity, perseverance, and resilience; alongside a desire to make learning an integral part of living. • Communication: Being able to communicate effectively through a variety of methods and tools to a range of different audiences. 
What is Computer Science?	What is Information Technology?
Computer science has been deemed as important to the school curriculum because of its potential to teach children Computational Thinking or how to think. Computational Thinking can teach students how to be successful with design, logical reasoning, problem solving and resilience - all valuable well beyond the computer science classroom. The ability to create and adapt new technologies distinguishes computer science from computer literacy. 	This is how we interface with technology using existing hardware. We need to teach children how to navigate around a variety of devices, type, save work, find and move files. In addition, they need to understand the internet and the web, use search engines, understand networks and generally be efficient and independent users of a range of technologies. There are three key aspects of online education, adopted and incorporated from the Education for a Connected World framework, focalised within the teaching of Information Technology at Masefield. These are: • Managing online information • Privacy and security • Copyright and ownership 

Computing long-term overview – Early Years Foundation Stage

Autumn Term – Digital Citizenship and Digital Literacy	Spring Term – Computer Science and Digital Literacy	Summer Term – Information Technology and Digital Literacy
Objectives: • DC.EYFS.1 I can talk about my digital footprint <u>Self-image and identity</u> • DC.EYFS.2 I can recognise, online or offline, that anyone can say ‘no’ / ‘please stop’ / ‘I’ll tell’ / ‘I’ll ask’ to somebody who makes them feel sad, uncomfortable, embarrassed or upset <u>Online Relationships</u> • DC.EYFS.3 I can recognise some ways in which the internet can be used to communicate • DC.EYFS.4 I can give examples of how I (might) use technology to communicate with people I know <u>Online Reputation</u> • DC.EYFS.5 I can identify ways that I can put information on the internet <u>Online Bullying</u> • DC.EYFS.6 I can describe ways that some people can be unkind online • DC.EYFS.7 I can offer examples of how this can make others feel <u>Health, wellbeing and lifestyle</u> • DC.EYFS.8 I can identify rules that help keep us safe and healthy in and beyond the home when using technology • DC.EYFS.9 I can give some simple examples of these rules	Objectives: • CS.EYFS.1 I can name items we control in the everyday environment • CS.EYFS.2 I can use every day technology • CS.EYFS.3 I can explore on screen activities – by clicking (cause and effect) • CS.EYFS.4 I know that an algorithm is a set of instruction that can solve a problem • CS.EYFS.5 create a simple algorithm for a BeeBot/Blue-Bots or remote control toy	Objectives: <u>Managing online information</u> • IT.EYFS.1 I can talk about how to use the internet as a way of finding information online • IT.EYFS.2 I can identify devices I could use to access information on the internet <u>Privacy and Security</u> • IT.EYFS.3 I can identify some simple examples of my personal information (e.g. name, address, birthday, age, location) • IT.EYFS.4 I can describe who would be trustworthy to share this information with; I can explain why they are trusted <u>Copyright and ownership:</u> • IT.EYFS.5 I know that work I create belongs to me • IT.EYFS.6 I can name my work so that others know it belongs to me
Resources: Project Evolve for Early Years Foundation Stage	Resources: Small world/real life resources throughout continuous provision (phones, scanner, microphones, cameras etc) BeeBots and mats Remote control toys Unplugged activities	Resources: Project Evolve for Early Years Foundation Stage
Vocabulary: Digital citizen, world wide web, self-Image and identity, online relationships, online reputation, online bullying, health and wellbeing.	Vocabulary: Technology, collaboration, microchip, directional language, algorithm, debugging.	Vocabulary: Information technology, computer networks, internet, world wide web, communication, collaboration, online information, personal information, ownership
Linked text: Webster’s Friend – Hannah Whaley		Linked text: Winnie and Wilbur: The New Computer – Valerie Thomas and Korky Paul

Computing long-term overview – Year 1

Autumn 1 – Digital Citizenship	Autumn 2 – Digital Literacy	Spring 1 – Consolidation of Computer Science from previous year	Spring 2 – New Computer Science Learning	Summer 1 – Information Technology	Summer 2 – Consolidation Project for Digital Literacy
Objectives: DC1.1 I can talk about my digital footprint <u>Self-image and identity</u> DC1.2 I can recognise that there may be people online who could make me feel sad, embarrassed or upset DC1.3 If something happens that makes me feel sad, worried, uncomfortable or frightened I can give examples of when and how to speak to an adult I can trust. <u>Online relationships</u> DC1.4 I can give examples of when I should ask permission to do something online and explain why this is important. DC1.5 I can explain why it is important to be considerate and kind to people online and to respect their choices <u>Online reputation</u> DC1.6 I recognise that information can stay online and could be copied <u>Online bullying</u> DC1.7 I can describe how to behave online in ways that do not upset others and can give examples <u>Health, wellbeing and lifestyle</u> DC1.8 I can explain rules to keep us safe when we are using technology both in and beyond the home	Objectives: DL1.1 I can input text and images using a simple publishing program DL1.2 I can type a simple sentence on the screen, making use of a word bank DL1.3 I can format my typing in a number of ways (size, colour, font) DL1.4 I know the main keys for typing e.g. shift, space bar, full stop DL1.5 I can type simple sentences using the correct format (Capital letters, space and full stop) DL1.6 I know how to make text bold/ italics / text alignment etc. DL1.7 I can use simple keyboard shortcuts (Ctrl + B, I, U to edit my text style) DL1.8 I can move to different places in the text using the arrow keys or mouse DL1.9 I can use the ‘undo’ icon to fix a mistake	Objectives: CS.EYFS.1 I can name items we control in the everyday environment CS.EYFS.2 I can use every day technology CS.EYFS.3 I can explore on screen activities – by clicking (cause and effect) CS.EYFS.4 I know that an algorithm is a set of instructions that can solve a problem CS.EYFS.5 I can create a simple algorithm for a BeeBot/Blue-Bots or remote control toy	Focus: Algorithms Objectives: CS1.1 I can tell you what an algorithm is CS1.2 I can plan a simple algorithm CS1.3 I can give and follow commands, which include straight / turning commands – one at a time CS1.4 I can debug a simple algorithm that is causing an unexpected outcome. CS1.5 I can break an algorithm down into smaller parts (decomposing / chunking) CS1.6 I can predict if a simple algorithm will work	Focus: Using the Internet Computing Pioneer: Jack Kilby and Robert Noyce Objectives: <u>Managing online information</u> IT1.1 I can give simple examples of how to find information (e.g. search engine, browsers, voice activated searching) IT1.2 I know how to get help from a trusted adult if we see content that makes us feel sad, uncomfortable worried or frightened. <u>Privacy and security</u> IT1.3 I can explain how passwords can be used to protect information and devices IT1.4 I can recognise more detailed examples of information that is personal to someone (e.g. where I live, my family’s names, where I go to school) IT1.5 I can explain why it is important to always ask a trusted adult before sharing any personal information online, belonging to myself or others <u>Copyright and ownership</u> IT1.6 I can explain why work I create using technology belongs to me (e.g. ‘it is my idea’ or ‘I designed it’) IT1.7 I can save my work under a suitable name so that others know it belongs to me (e.g. filename, name on content)	Consolidation of Digital Literacy from Autumn 2. Objectives: DL1.1 I can input text and images using a simple publishing program DL1.2 I can type a simple sentence on the screen, making use of a word bank DL1.3 I can format my typing in a number of ways (size, colour, font) DL1.4 I know the main keys for typing e.g. shift, space bar, full stop DL1.5 I can type simple sentences using the correct format (Capital letters, space and full stop) DL1.6 I know how to make text bold/ italics / text alignment etc. DL1.7 I can use simple keyboard shortcuts (Ctrl + B, I, U to edit my text style) DL1.8 I can move to different places in the text using the arrow keys or mouse DL1.9 I can use the ‘undo’ icon to fix a mistake
Resources: Project Evolve for complete lesson plans on above objectives	Resources: Microsoft Word PurpleMash 2Type	Resources: Small world/real life resources throughout (phones, scanner, microphones, cameras etc) BeeBots and mats Remote control toys Unplugged activities	Resources: BeeBots and mats Remote control toys Unplugged activities	Resources: Project Evolve for complete lesson plans on above objectives	Resources: Microsoft Word PurpleMash 2Type
Vocabulary: Digital citizen, digital footprint, world wide web, self-Image and identity, online relationships, online reputation, online bullying, health and wellbeing.	Vocabulary: Digital literacy, word processing, keyboard keys, caps lock, shift, space bar, document, cursor, insert, formatting, abstraction.	Vocabulary: Technology, collaboration, microchip, directional language, algorithm, debugging.	Vocabulary: Computer science, computational thinking, algorithm, decompose, debugging, abstraction, input, output, unplugged, event blocks, directional language	Vocabulary: Information technology, computer networks, internet, world wide web, communication, collaboration, online information, personal information, ownership	Vocabulary: Digital literacy, word processing, keyboard keys, caps lock, shift, space bar, document, cursor, insert, formatting, abstraction.
Linked text: Dot – Randi Zuckerberg				Linked text: Chicken Clicking : Jeanne Willis, Tony Ross	

Computing long-term overview – Year 2

Autumn 1 – Digital Citizenship	Autumn 2 – Digital Literacy	Spring 1 – Consolidation of Computer Science from previous year	Spring 2 – New Computer Science Learning	Summer 1 – Information Technology	Summer 2 – Consolidation Project for Digital Literacy
Objectives: DC2.1 I can talk about my digital footprint <u>Self-image and identity</u> DC2.2 I can explain how other people may look and act differently online and offline DC2.3 I can give examples of issues online that might make me feel sad, worried, uncomfortable or frightened; I can give examples of how I might get help. <u>Online relationships</u> DL2.4 I can give examples of how someone might use technology to communicate with others they don't also know offline and explain why this might be risky. (e.g. email, online gaming, a pen-pal in another school / country) DL2.5 I can explain why I have a right to say 'no' or 'I will have to ask someone'. DL2.6 I can explain why I should always ask a trusted adult before clicking 'yes', 'agree' or 'accept' online <u>Online reputation</u> DL2.7 I can explain how information put online about me can last for a long time <u>Online bullying</u> DL2.8 I can explain what bullying is, how people may bully others and how bullying can make someone feel DL2.9 I can give examples of bullying behaviour and how it could look online <u>Health, wellbeing and lifestyle</u> DL2.10 I can explain simple guidance for using technology in different environments and settings, e.g. accessing online technologies in public places and the home environment.	Objectives: DL2.1 I can use spell checker to check my work DL2.2 I can use the return/enter key to insert relevant line breaks DL2.3 I can save an image from the internet rather than using copy & paste DL2.4 I can add a page border DL2.5 I can insert a basic table DL2.6 I can select the page orientation that would best suit my work. e.g. portrait to landscape DL2.7 I can transfer these skills into PowerPoint	Focus: Algorithms Objectives: CS1.1 I can tell you what an algorithm is CS1.2 I can plan a simple algorithm CS1.3 I can give and follow commands, which include straight / turning commands – one at a time CS1.4 I can debug a simple algorithm that is causing an unexpected outcome. CS1.5 I can break an algorithm down into smaller parts (decomposing / chunking) CS1.6 I can predict if a simple algorithm will work	Focus: Programs and Events Objectives: CS2.1 I can tell you what a program is CS2.2 I can tell you what an event is CS2.3 I know programs need an event to begin CS2.4 I can give and follow instructions, which include direction and turning command – several in order CS2.5 I know that computers need precise instructions CS2.6 I can plan use logical reasoning to predict outcomes CS2.7 I can create a program that contains several commands for a device or software programme CS2.8 I can debug a program independently that has caused an unexpected outcome CS2.9 I can use different events to start my programs – timing / on click / on button press	Focus: Effective Searching Computing Pioneer: Tim Berners-Lee Objectives: <u>Managing online information</u> IT2.1 I can use simple keywords in search engines IT2.2 I can demonstrate how to navigate a simple webpage to get to information I need (e.g. home, forward, back buttons; links, tabs and sections) IT2.3 I can explain the difference between things that are imaginary, 'made up' or 'make believe' and things that are 'true' or 'real' <u>Privacy and security</u> IT2.4 I can explain how passwords can be used to protect information, accounts and devices IT2.5 I can explain and give examples of what is meant by 'private' and 'keeping things private' IT2.6 I can explain how some people may have devices in their homes connected to the internet and give examples (e.g. lights, fridges, toys, televisions) <u>Copyright and ownership</u> IT2.7 I can recognise that content on the internet may belong to other people	Consolidation of Digital Literacy from Autumn 2. Objectives: DL2.1 I can use spell checker to check my work DL2.2 I can use the return/enter key to insert relevant line breaks DL2.3 I can save an image from the internet rather than using copy & paste DL2.4 I can add a page border DL2.5 I can insert a basic table DL2.6 I can select the page orientation that would best suit my work. e.g. portrait to landscape DL2.7 I can transfer these skills into PowerPoint
Resources: Project Evolve for complete lesson plans on above objectives	Resources: Microsoft Word Microsoft PowerPoint	Resources: BeeBots and mats Remote control toys Unplugged activities	Resources: BeeBots and mats Remote control toys Unplugged activities	Resources: Project Evolve for complete lesson plans on above objectives	Resources: Microsoft Word Microsoft PowerPoint
Vocabulary: Digital citizen, digital footprint, world wide web, self-Image and identity, online relationships, online reputation, online bullying, health and wellbeing.	Vocabulary: Digital literacy, word processing, document, punctuation, exclamation marks, question marks, caps lock, shift, space bar, table, row, column, border, cursor, insert, formatting, abstraction	Vocabulary: Computer science, computational thinking, algorithm, decompose, debugging, abstraction, input, output, unplugged, event blocks, directional language	Vocabulary: Computer science, computational thinking, algorithm, program, decompose, debugging, abstraction, input, output, unplugged, event blocks, directional language	Vocabulary: Information technology, computer networks, internet, world wide web, communication, collaboration, online information, privacy, security, copyright, ownership	Vocabulary: Digital literacy, word processing, document, punctuation, exclamation marks, question marks, caps lock, shift, space bar, table, row, column, border, cursor, insert, formatting, abstraction
Linked text: #Goldilocks – Jeanne Willis				Linked text: Clicker the cat	

Computing long-term overview – Year 3

Autumn 1 – Digital Citizenship	Autumn 2 – Digital Literacy	Spring 1 – Consolidation of Computer Science from previous year	Spring 2 – New Computer Science Learning	Summer 1 – Information Technology	Summer 2 – Consolidation Project for Digital Literacy
Objectives: DC3.1 I can talk about my digital footprint <u>Self-image and identity</u> DC3.2 I can explain what is meant by the term ‘identity’ DC3.3 I can explain how people can represent themselves in different ways online <u>Online relationships</u> DC3.4 I can explain what is meant by ‘trusting someone online’, why this is different from ‘liking someone online’, and why it is important to be careful about who to trust online including what information and content they are trusted with DC3.5 I can explain how someone’s feelings can be hurt by what is said or written online <u>Online reputation</u> DC3.6 I can give examples of what anyone may or may not be willing to share about themselves online DC3.7 I can explain the need to be careful before sharing anything personal <u>Online bullying</u> DC3.8 I can describe appropriate ways to behave towards other people online and why this is important. DC3.9 I can give examples of how bullying behaviour could appear online and how someone can get support. <u>Health, wellbeing and lifestyle</u> DC3.10 I can explain why spending too much time using technology can sometimes have a negative impact on anyone, e.g. mood, sleep, body, relationships.	Objectives: DL3.1 I can type a number of sentences using the keyboard DL3.2 I can use tab to indent paragraphs DL3.3 I can use cut, copy and paste to re-order text DL3.4 I can use keyboard shortcuts e.g. Ctrl + V, X, C to re-order text. DL3.5 I can use bullet points, speech bubbles, auto shapes and text boxes DL3.6 I can format wrapping/layout of text boxes and images in word DL3.7 I can format images - move, rotate and re-size shapes DL3.8 I can use the format tab to alter word art to enhance my work DL3.9 I can use a variety of table tools (merge cells, fill, columns etc.) DL3.10 I can explain the difference between save and save as DL3.11 I can create a folder to save my work in DL3.12 I can give a file a name to identify it DL3.13 I can transfer these skills into PowerPoint	Focus: Programs and Events Objectives: CS2.1 I can tell you what a program is CS2.2 I can tell you what an event is CS2.3 I know programs need an event to begin CS2.4 I can give and follow instructions, which include direction and turning command – several in order CS2.5 I know that computers need precise instructions CS2.6 I can plan use logical reasoning to predict outcomes CS2.7 I can create a program that contains several commands for a device or software programme CS2.8 I can debug a program independently that has caused an unexpected outcome CS2.9 I can use different events to start my programs – timing / on click / on button press	Focus: Sequence Objectives: CS3.1 I know that a sequence is a list of instructions in a particular order CS3.2 I know that if I change the sequence I may change the outcome of the program CS3.3 I can sequence a simple program on Logo to produce a line drawing of a 2D shape CS3.4 I can solve problems by decomposing them into smaller parts CS3.5 I can detect and debug errors in my sequence CS3.6 I can use and edit a pre-written program to achieve a specific outcome CS3.7 I can use logical reasoning to explain what will happen next CS3.8 I can predict how a change in a sequence may impact on the outcome of a program	Focus: Online Communication Computing Pioneer: Ada Lovelace and Charles Babbage Objectives: <u>Managing online information</u> IT3.1 I can demonstrate how to use key phrases in search engines to gather accurate information online IT3.2 I can explain the difference between a ‘belief’, an ‘opinion’ and a ‘fact. and can give examples of how and where they might be shared online, e.g. in videos, memes, posts, news stories <u>Privacy and security</u> IT3.3 I can describe simple strategies for creating and keeping passwords private IT3.4 I can give reasons why someone should only share information with people they choose to and can trust IT3.5 I can explain that if they are not sure or feel pressured then they should tell a trusted adult. <u>Copyright and ownership</u> IT3.6 I can explain why copying someone else’s work from the internet without permission isn’t fair and can explain what problems this might cause	Consolidation of Digital Literacy from Autumn 2. Objectives: DL3.1 I can type a number of sentences using the keyboard DL3.2 I can use tab to indent paragraphs DL3.3 I can use cut, copy and paste to re-order text DL3.4 I can use keyboard shortcuts e.g. Ctrl + V, X, C to re-order text. DL3.5 I can use bullet points, speech bubbles, auto shapes and text boxes DL3.6 I can format wrapping/layout of text boxes and images in word DL3.7 I can format images - move, rotate and re-size shapes DL3.8 I can use the format tab to alter word art to enhance my work DL3.9 I can use a variety of table tools (merge cells, fill, columns etc.) DL3.10 I can explain the difference between save and save as DL3.11 I can create a folder to save my work in DL3.12 I can give a file a name to identify it DL3.13 I can transfer these skills into PowerPoint
Resources: Project Evolve for complete lesson plans on above objectives	Resources: Microsoft Word Microsoft PowerPoint	Resources: BeeBots and mats Remote control toys Unplugged activities	Resources: CS First	Resources: Project Evolve for complete lesson plans on above objectives	Resources: Microsoft Word Microsoft PowerPoint
Vocabulary: Digital citizen, digital footprint, world wide web, self-Image and identity, online relationships, online reputation, online bullying, health and wellbeing.	Vocabulary: Digital literacy, formatting, layout, audience, appropriate, relevant, abstraction, background, border, animation, transition, keyboard, shortcut, insert, cursor	Vocabulary: Computer science, computational thinking, algorithm, program, decompose, debugging, abstraction, input, output, unplugged, event blocks, directional language	Vocabulary: Computer science, computational thinking, algorithm, program, sequence, decompose, debugging, abstraction, input, output, unplugged, event blocks, directional language	Vocabulary: Information technology, computer networks, internet, world wide web, communication, collaboration, online information, privacy, security, copyright, ownership	Vocabulary: Digital literacy, formatting, layout, audience, appropriate, relevant, abstraction, background, border, animation, transition, keyboard, shortcut, insert, cursor
Linked text: Tek: The Modern Cave Boy – Patrick McDonnell				Linked text: Little People, Big Dreams: Ada Lovelace – Maria Isabel Sanchez Vegara	

Computing long-term overview – Year 4

Autumn 1 – Digital Citizenship	Autumn 2 – Digital Literacy	Spring 1 – Consolidation of Computer Science from previous year	Spring 2 – New Computer Science Learning	Summer 1 – Information Technology	Summer 2 – Consolidation Project for Digital Literacy
Objectives: DC4.1 I can talk about my digital footprint <u>Self-image and identity</u> DC4.2 I can explain how my online identity can be different to my offline identity DC4.3 I can explain that others online can pretend to be someone else, including my friends, and can suggest reasons why they might do this <u>Online relationships</u> DC4.4 I can give examples of how to be respectful to others online and describe how to recognise healthy and unhealthy online behaviours DC4.5 I can explain how content shared online may feel unimportant to one person but may be important to other people’s thoughts feelings and beliefs <u>Online reputation</u> DC4.6 I can describe how to find out information about others by searching online <u>Online bullying</u> DC4.7 I can describe ways people can be bullied through a range of media (e.g. image, video, text, chat) DC4.8 I can explain why people need to think carefully about how content they post might affect others, their feelings and how it may affect how others feel about them (their reputation) <u>Health, wellbeing and lifestyle</u> DC4.9 I can explain how using technology can be a distraction from other things, in both a positive and negative way	Objectives: DL4.1 I can transfer my word processing skills into other multimedia packages e.g. PowerPoint DL4.2 I can include importing images, hyperlinks and the use of sounds recorded DL4.3 I can enter a basic mathematical formula into Excel DL4.4 I can add basic mathematical formulas DL4.5 I can use SUM to calculate the total of a set of numbers in a range of cells DL4.6 I can change the look of a spreadsheet by using different formats e.g. text styles, colour, number format inc, currency and date, row and column heights DL4.7 I can insert and delete columns and rows in a spreadsheet DL4.8 I can use spreadsheets to create a graph DL4.9 I can decide on the most appropriate form of graph for a data set and give reasons for my choice DL4.10 I can interpret graphs of data collected from sensors	Focus: Sequence Objectives: CS3.1 I know that a sequence is a list of instructions in a particular order CS3.2 I know that if I change the sequence I may change the outcome of the program CS3.3 I can sequence a simple program on Logo to produce a line drawing of a 2D shape CS3.4 I can solve problems by decomposing them into smaller parts CS3.5 I can detect and debug errors in my sequence CS3.6 I can use and edit a pre-written program to achieve a specific outcome CS3.7 I can use logical reasoning to explain what will happen next CS3.8 I can predict how a change in a sequence may impact on the outcome of a program	Focus: Repeats and loops Objectives: CS4.1 I know what a repeat is CS4.2 I know that a repeat is used to repeat a set of instructions CS4.3 I can use repeats in programs confidently CS4.4 I can independently select repeat and sequence code to make my own program CS4.5 I can detect and debug errors in algorithms and programs. CS4.6 I can transfer my coding skills between software CS4.7 I can explain why it is important to use the repeat function in a particular place in my sequence	Focus: Computer Networks Computing Pioneer: Hedy Lamarr and Radia Perlman Objectives: <u>Managing online information</u> IT4.1 I can analyse information to make a judgement about probable accuracy and I understand why it is important to make my own decisions regarding content and that my decisions are respected by others IT4.2 I can describe how to search for information within a wide group of technologies and make a judgement about the probable accuracy (e.g. social media, image sites, video sites) IT4.3 I can explain what is meant by fake news e.g. why some people will create stories or alter photographs and put them online to pretend something is true when it isn’t <u>Privacy and security</u> IT4.4 I can describe strategies for keeping personal information private, depending on context IT4.5 I know what the digital age of consent is and the impact this has on online services asking for consent <u>Copyright and ownership</u> IT4.6 When searching on the internet for content to use, I can explain why I need to consider who owns it and whether I have the right to reuse it. IT4.7 I can give some simple examples of content which I must not use without permission from the owner, e.g. videos, music, images. IT4.8 I can explain a range of internet standards (e.g. HTTP, URL)	Consolidation of Digital Literacy from Autumn 2. Objectives: DL4.1 I can transfer my word processing skills into other multimedia packages e.g. PowerPoint DL4.2 I can include importing images, hyperlinks and the use of sounds recorded DL4.3 I can enter a basic mathematical formula into Excel DL4.4 I can add basic mathematical formulas DL4.5 I can use SUM to calculate the total of a set of numbers in a range of cells DL4.6 I can change the look of a spreadsheet by using different formats e.g. text styles, colour, number format inc, currency and date, row and column heights DL4.7 I can insert and delete columns and rows in a spreadsheet DL4.8 I can use spreadsheets to create a graph DL4.9 I can decide on the most appropriate form of graph for a data set and give reasons for my choice DL4.10 I can interpret graphs of data collected from sensors
Resources: Project Evolve for complete lesson plans on above objectives	Resources: Microsoft Word Microsoft PowerPoint Microsoft Excel	Resources: CS First	Resources: CS First	Resources: Project Evolve for complete lesson plans on above objectives	Resources: Microsoft Word Microsoft PowerPoint Microsoft Excel
Vocabulary: Digital citizen, digital footprint, world wide web, self-Image and identity, online relationships, online reputation, online bullying, health and wellbeing.	Vocabulary: Digital literacy, spreadsheet, formula, SUM, AutoSum, sort, filter, abstraction, formatting, layout, appropriate, border, insert	Vocabulary: Computer science, computational thinking, algorithm, program, sequence, decompose, debugging, abstraction, input, output, unplugged, event blocks, directional language	Vocabulary: Computer science, computational thinking, algorithm, program, sequence, repeat, loops, decompose, debugging, abstraction, input, output, unplugged, event blocks, directional language	Vocabulary: Information technology, computer networks, internet, world wide web, communication, collaboration, online information, privacy, security, copyright, ownership, HTML, HTTP, URL and Web Server	Vocabulary: Digital literacy, spreadsheet, formula, SUM, AutoSum, sort, filter, abstraction, formatting, layout, appropriate, border, insert
Linked text: But it’s Just a Game – Julia Cook				Linked text: Hedy Lamarr’s Double Life – Laurie Wallmark	

Computing long-term overview – Year 5

Autumn 1 – Digital Citizenship	Autumn 2 – Digital Literacy	Spring 1 – Consolidation of Computer Science from previous year	Spring 2 – New Computer Science Learning	Summer 1 – Information Technology	Summer 2 – Consolidation Project for Digital Literacy
Objectives: DC5.1 I can talk about my digital footprint <u>Self-image and identity</u> DC5.2 I can demonstrate responsible choices about my online identity, depending on context DC5.3 I can explain how identity online can be copied, modified or altered <u>Online relationships</u> DC5.4 I can explain how someone can get help if they are having problems and identify when to tell a trusted adult <u>Online reputation</u> DC5.5 I can describe ways that information about anyone online can be used by others to make judgments about an individual and why these may be incorrect <u>Online bullying</u> DC5.6 I can recognise online bullying can be different to bullying in the physical world and can describe some of those differences DC5.7 I can describe the helpline services which can help people experiencing bullying, and how to access them (e.g. Childline/CEOP/ The Mix) <u>Health, wellbeing and lifestyle</u> DC5.8 I can describe ways technology can affect health and well-being both positively (e.g. mindfulness apps) and negatively DC5.9 I can describe some strategies, tips or advice to promote health and well-being with regards to technology DC5.10 I recognise the benefits and risks of accessing information about health and well-being online and how we should balance this with talking to trusted adults and professionals	Objectives: DL5.1 I can select appropriate tools to add emphasis and effect to my work DL5.2 I can explain why I have chosen my layout and formatting DL5.3 I can review and edit my work and talk about the changes I made DL5.4 I can explain why my work is suitable for the audience DL5.5 I can create a database structure of my own and enter the data DL5.6 I can prepare a data collection form and collect quality information DL5.7 I can use databases to create a graph DL5.8 I can select the most appropriate form of graph for a data set giving reasons for my choice DL5.9 I can interpret graphs of data collected from a variety of sources	Focus: Repeats and loops Objectives: CS4.1 I know what a repeat is CS4.2 I know that a repeat is used to repeat a set of instructions CS4.3 I can use repeats in programs confidently CS4.4 I can independently select repeat and sequence code to make my own program CS4.5 I can detect and debug errors in algorithms and programs. CS4.6 I can transfer my coding skills between software CS4.7 I can explain why it is important to use the repeat function in a particular place in my sequence	Focus: Conditional/Selection Objectives: CS5.1 I can tell you what a conditional / selection is CS5.2 I can plan algorithm and the write a program using the following: commands, sequence, repetition and selection / condition ('if...then') CS5.3 I can detect and debug errors in more complex algorithms and programs CS5.4 I can use selection to create games in which the user must make a choice CS5.5 I can use my skills and understanding of conditional / selection in more than 2 programs	Focus: Evaluation Computing Pioneer: Bill Gates, Grace Hopper and Steve Wozniak Objectives: IT5.1 I know what an operating system is and why it important IT5.2 I can identify the key internal parts of a computer – RAM, memory, processor and motherboard and describe what each part does <u>Managing online information</u> IT5.3 I can explain what is meant by 'being sceptical'; I can give examples of when and why it is important to be 'sceptical' IT5.4 I can evaluate digital content and can explain how to make choices about what is trustworthy e.g. differentiating between adverts and search results IT5.5 I can explain key concepts including: information, reviews, fact, opinion, belief, validity, reliability and evidence <u>Privacy and security</u> IT5.6 I can explain what a strong password is and demonstrate how to create one IT5.7 I can explain what app permissions are and can give some examples <u>Copyright and ownership</u> IT5.8 I can assess and justify when it is acceptable to use the work of others IT5.9 I can give examples of content that is permitted to be reused and know how this content can be found online	Consolidation of Digital Literacy from Autumn 2. Objectives: DL5.1 I can select appropriate tools to add emphasis and effect to my work DL5.2 I can explain why I have chosen my layout and formatting DL5.3 I can review and edit my work and talk about the changes I made DL5.4 I can explain why my work is suitable for the audience DL5.5 I can create a database structure of my own and enter the data DL5.6 I can prepare a data collection form and collect quality information DL5.7 I can use databases to create a graph DL5.8 I can select the most appropriate form of graph for a data set giving reasons for my choice DL5.9 I can interpret graphs of data collected from a variety of sources
Resources: Project Evolve for complete lesson plans on above objectives	Resources: Microsoft Word Microsoft PowerPoint Microsoft Excel	Resources: CS First	Resources: CS First	Resources: Project Evolve for complete lesson plans on above objectives	Resources: Microsoft Word Microsoft PowerPoint Microsoft Excel
Vocabulary: Digital citizen, digital footprint, world wide web, self-Image and identity, online relationships, online reputation, online bullying, health and wellbeing.	Vocabulary: Digital literacy, database, record, field, spreadsheet, formula, sort, filter, abstraction, appropriate, formatting, layout	Vocabulary: Computer science, computational thinking, algorithm, program, sequence, repeat, loops, decompose, debugging, abstraction, input, output, unplugged, event blocks, directional language	Vocabulary: Computer science, computational thinking, algorithm, program, sequence, repeat, loops, conditional, selection, decompose, debugging, abstraction, input, output, unplugged, event blocks, directional language	Vocabulary: Information technology, computer networks, internet, world wide web, communication, evaluate, collaboration, search engine, online information, privacy, security, copyright, ownership	Vocabulary: Digital literacy, database, record, field, spreadsheet, formula, sort, filter, abstraction, appropriate, formatting, layout
Linked text: Troll Stinks – Jeanne Willis				Linked text: The Bill Gates Story – Studio Cheongbi	

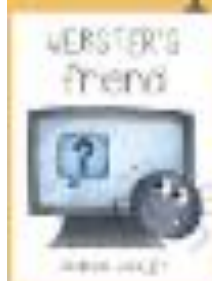
Computing long-term overview – Year 6

Autumn 1 – Digital Citizenship	Autumn 2 – Digital Literacy	Spring 1 – Consolidation of Computer Science from previous year	Spring 2 – New Computer Science Learning	Summer 1 – Information Technology	Summer 2 – Consolidation Project for Digital Literacy
Objectives: DC6.1 I can talk about my digital footprint <u>Self-image and identity</u> DC6.2 I can talk about the importance of asking until I get the help needed DC6.3 I can describe issues online that could make anyone feel sad, worried, uncomfortable or frightened and explain how to get help if this happens. DC6.4 I can identify and critically evaluate online content relating to gender, race, religion, disability, culture and other groups, and explain why it is important to challenge and reject inappropriate representations online. <u>Online relationships</u> DC6.5 I can explain how sharing something online may have an impact either positively or negatively DC6.6 I can describe how to be kind and show respect for others online including the importance of respecting boundaries regarding what is shared about them online and how to support them if others do not <u>Online reputation</u> DC6.7 I can explain strategies anyone can use to protect their ‘digital personality’ and online reputation, including degrees of anonymity <u>Online bullying</u> DC6.8 I can describe how to capture bullying content as evidence (e.g. screen-grab, URL, profile) to share with others who can help me <u>Health, wellbeing and lifestyle</u> DC6.9 I can describe common systems that regulate age-related content (e.g. PEGI, BBFC, parental warnings) and describe their purpose DC6.10 I can assess and action different strategies to limit the impact of technology on health (e.g. night-shift mode, regular breaks, correct posture, sleep, diet and exercise)	Objectives: I can use skills I have learnt across multiple application programs, including: DL6.1 I can choose, select and use a combination of software to present my work DL6.2 I can select appropriate tools to add emphasis and effect to my work DL6.3 I can explain why I have chosen my layout and formatting DL6.4 I can review and edit my work and talk about the changes I made DL6.5 I can consider whether my work is suitable for the audience DL6.6 I can draft and redraft my work by deleting, inserting and replacing text DL6.7 I can interpret graphs of data collected from a variety of sources	Focus: Conditional/Selection Objectives: CS5.1 I can tell you what a conditional / selection is CS5.2 I can plan algorithm and the write a program using the following: commands, sequence, repetition and selection / condition (‘if...then’) CS5.3 I can detect and debug errors in more complex algorithms and programs CS5.4 I can use selection to create games in which the user must make a choice CS5.5 I can use my skills and understanding of conditional / selection in more than 2 programs	Focus: Variable Objectives: CS6.1 I can explain what a variable is CS6.2 I can confidently use events, repeats, selection and variables CS6.3 I can use a variable in a variety of programming software CS6.4 I can confidently decompose a problem and methodically create a program to solve it, testing and adapting as I go CS6.5 I can evaluate the effectiveness of my programming and suggest improvements CS6.6 I confidently use the Blockly programming language	Focus: History and the future of Computing Computing Pioneers: Alan Turing and Elon Musk Objectives: <u>Managing online information</u> IT6.1 I can explain how search engines work and how results are selected and ranked IT6.2 I can explain how to use search technologies effectively IT6.3 I can explain how and why some people may present ‘opinions’ as ‘facts’; why the popularity of an opinion or the personalities of those promoting it does not necessarily make it true, fair or perhaps even legal IT6.4 I can describe how some online information can be opinion and can offer examples IT6.5 I can define the terms ‘influence’, ‘manipulation’ and ‘persuasion’ and explain how someone might encounter these online (e.g. advertising and ‘ad targeting’ and targeting for fake news) <u>Privacy and security</u> IT6.6 I can describe how and why people should keep their software and apps up to date, e.g. auto updates IT6.7 I can describe simple ways to increase privacy on apps and services that provide privacy settings IT6.8 I can describe ways in which some online content targets people to gain money or information illegally; I can describe strategies to help me identify such content (e.g. scams, phishing) <u>Copyright and ownership</u> IT6.9 I can demonstrate how to make references to and acknowledge sources I have used from the internet	Consolidation of Digital Literacy from Autumn 2. Objectives: I can use skills I have learnt across multiple application programs, including: DL6.1 I can choose, select and use a combination of software to present my work DL6.2 I can select appropriate tools to add emphasis and effect to my work DL6.3 I can explain why I have chosen my layout and formatting DL6.4 I can review and edit my work and talk about the changes I made DL6.5 I can consider whether my work is suitable for the audience DL6.6 I can draft and redraft my work by deleting, inserting and replacing text DL6.7 I can interpret graphs of data collected from a variety of sources
Resources: Project Evolve for complete lesson plans on above objectives	Resources: Microsoft Word Microsoft PowerPoint Microsoft Excel	Resources: CS First	Resources: CS First	Resources: Project Evolve for complete lesson plans on above objectives	Resources: Microsoft Word Microsoft PowerPoint Microsoft Excel
Vocabulary: Digital citizen, digital footprint, world wide web, self-Image and identity, online relationships, online reputation, online bullying, health and wellbeing	Vocabulary: Digital literacy, appropriate, relevant, audience, formatting, layout, abstraction, data, sort, filter	Vocabulary: Computer science, computational thinking, algorithm, program, sequence, repeat, loops, conditional, selection, decompose, debugging, abstraction, input, output, unplugged, event blocks, directional language	Vocabulary: Computer science, computational thinking, algorithm, program, sequence, repeat, loops, conditional, selection, variable, decompose, debugging, abstraction, input, output, unplugged, event blocks, directional language	Vocabulary: Information technology, computer networks, internet, world wide web, communication, evaluate, collaboration, search engine, online information, privacy, security, copyright, ownership, cyber-crime	Vocabulary: Digital literacy, appropriate, relevant, audience, formatting, layout, abstraction, data, sort, filter
Linked text: Pretty – Canizales				Linked text: Elon: (Musk) – Tracey Turner	

Computing Reading Journey



We learn to read,
then we read to learn.



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