Computing Progression of Knowledge

EYFS

Although Computing no longer features within the EYFS framework, at Abbeys the use of technology will continue to be modelled and explored within the EYFS provision and consideration will be made about which resources will aid different themes of learning, developmental needs and the children's interests. The children will develop an understanding of different technology through exploration and application to play to prepare them for learning in Key Stages 1 and 2 and reduce the cognitive loading when exploring other concepts in future learning.

KS1/2 - National Curriculum

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:

- 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.

Pupils should be taught in KS1:

Computer Science:

1. Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
2. Create and debug simple programs
3. Use logical reasoning to predict the behaviour of simple programs

Information Technology:

1. Use technology purposefully to create, organise, store, manipulate and retrieve digital content

E Safety and Digital Literacy:

1. Recognise common uses of information technology beyond school
2. 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

Pupils should be taught in KS2:

Computer Science:

1. Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
2. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output
3. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
4. Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web
5. Appreciate how [search] results are selected and ranked

Information Technology:

1. Use search technologies effectively
2. 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

E Safety and Digital Literacy:

1. Understand the opportunities [networks] offer for communication and collaboration
2. Be discerning in evaluating digital content
3. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

Curriculum Knowledge Coverage – Sonar Statements

Seen within current planning – cycle A cycle B Both cycles

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
E Safety	Recognise that a range of technology is used in places such as homes and schools	Develop an understanding of how to use technology safely Know where to go for help/support when they have concerns about content/contact on internet	Use technology safely and respectfully, keeping personal information private Identify where to go for help/support when concerned about content/contact on internet/other online technologies	Use technology safely, respectfully and responsibly Recognise acceptable/unacceptable behaviour and identify ways to report concerns about content and contact	Recognise acceptable/unacceptable behaviour and identify ways to report concerns about content and contact	Confidently, competently and responsibly use information and communication technology	Confidently, competently and responsibly use information and communication technology
Digital Literacy	Select and use technology for a particular purpose	Use technology to create, store and retrieve digital content	Use technology purposefully to create, store, retrieve, organise and manipulate digital content	Use a variety of software on digital devices	Select and use a variety of software on digital devices	Express own ideas by selecting, using and combining a variety of software on digital devices to design and create programs	Express own ideas by selecting, using and combining a variety of software on a range of digital devices and create programs
Information technology	Recognise that a range of technology is used in places such as homes and schools	Begin to recognise common uses of information technology beyond school	Recognise common uses of information technology beyond school	Show emerging understanding of computer networks including the internet and how they provide multiple services such as the World Wide Web Use some search technologies effectively and appreciate how results are selected Decide which questions to ask when using search engines	Understand computer networks including the internet and how they provide multiple services such as the World Wide Web Use search technologies effectively and appreciate how results are selected and ranked Evaluate the reliability of digital content Begin to ask and answer questions based on the reliability of digital content	Recognise the opportunities computer networks offer for communication and collaboration Use a wide range of search technologies effectively and appreciate how results are selected and ranked Be discerning in evaluating the reliability of digital content	Use the opportunities computer networks offer for communication and collaboration Appreciate how results are selected and ranked and use this to retrieve accurate content Be discerning in evaluating the reliability of digital content

Computer Science		Develop reasoning to predict the behaviour of simple programs Create simple programs and begin to debug them Begin to understand that programs work by following instructions Begin to develop an understanding of algorithms	Understand what algorithms are Understand how algorithms are implemented as programs on digital devices Understand that programs execute by following precise and unambiguous instructions Use logical reasoning to predict the behaviour of simple programs Create and debug simple programs	Start to use reasoning to understand how algorithms work Detect errors in algorithms and programs Begin to solve problems by decomposing them into smaller parts Start to use sequence and selection in programs Begin to develop understanding of how to write and debug programs that accomplish specific goals, including controlling or simulating physical systems Begin to work with various forms of input/output	Use logical reasoning to understand how algorithms work Detect and correct errors in algorithms and programs Start to use sequence, selection and repetition in programs Write and debug programs that accomplish specific goals, including controlling or simulating physical systems Begin to solve problems by decomposing them into smaller parts Work with variables and various forms of input/output	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 Accurately manipulate variables and various forms of input/output Use logical reasoning to understand how algorithms work and detect and correct errors in algorithms and programs	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 accurately in programs Accurately manipulate a wide range of variables and various forms of input/output Securely use logical reasoning to understand how algorithms work and detect and correct errors in algorithms and programs

Breakdown of the Areas of Computing

Computer Science	Information technology	E Safety & Digital Literacy
Computational Thinking Coding/Programming Computer Networks	Word Processing/typing Data Handling Presentation including web design and e-book creation Animation Video Creation Photography and digital art AR & VR Sound	Self-image and identity Online relationships Online Reputation Online Bullying Managing online information Health, well-being and lifestyle Privacy and security Copyright and Ownership

Software programs and app progression

Area of Computing	EYFS	KS1	LKS2	UKS2
Coding/Programming	Beebots Code and Go Mouse	Code and Go Mouse Sphero Scratch Jr 2Code 2Go	Scratch 2Code Sphero	2Code Micro:Bits
Word Processing/ Typing	Keyboards in role play iPad/IWB keyboard on screen	2Type Book Creator	2Type Adobe Spark Video Google Docs, Slides	2Type BBC Dance mat typing Google Docs, Slides
Data Handling	Tapestry - photographs of practical sorting work Simple City – Maths City 2Count	2Count 2Question	2Graph 2Calculate Google Forms	Google Forms Google Sheets
Presentation/ Video creation	Cameras Tapestry 2Paint a Picture/Mini Mash	2Create a story ChatterPix Kids Book Creator	Google Slides Adobe Spark Video	Keynote iMovie
Animation	ChatterPix Kids	ChatterPix Kids 2Animate	2Animate	iMovie I can animate
Photography & digital art	Cameras Simple City – scene creator 2Paint	Cameras 2Paint	Camera PicCollage	Camera Mark Up PicCollage
AR			AR Makr	
Sound	Tonie Box ChatterPix Kids 2Explore	2Sequence	Busy Beats	Garageband
Communication/Online relationships	Tapestry (Used by staff and shared with children)	Google Classroom	Google Classroom 2Email 2Blog	Google Classroom 2Blog

Some programs are used directly within Computing lessons and some are used in other subject areas

E-Safety & Digital Literacy – Using Purple Mash & Project Evolve

Subject specific vocabulary progression

Area of Computing	EYFS	KS1	LKS2	UKS2
Computational Thinking Coding/Programming	BeeBot Remote Control Buttons Control Left Right Forwards Backwards Clear Pause	Instructions Program Grow and Shrink Coding blocks Move Sequence Evaluate Command Program Logical reasoning Debug	Decompose Sprite Costume Stage Coding blocks – motion, looks, sound Control blocks Forever loop Sensing blocks Variables Levels Scoring	Simplify Efficiency Decomposition Abstraction Friction Functions Concatenation
Components of Computers & Networks	Desktop computer Tablet Interactive Whiteboard Monitor Mouse Cursor Click Drag Keyboard Type	Search engine Website WWW – World Wide Web Internet Web address Web page Browser Search bar Results Information Technology Devices Computer Scanner Printer Barcodes	Components CPU Graphics card Hard Drive Motherboard Monitor Network card Peripherals RAM Software Input Output Network Connection Network switch Server WAP – Wireless Access Point Network cable Socket Router Network security LAN – Local Area Network WAN – Wider Area Network	Refine Index Crawler Bot Ordering Ranking Links Algorithm Search engine optimisation (SEO), Communication Protocols Web Address IP Address – Internet Protocol address DNS – Domain Name Server Data Packets Header Data Payload Chat Collaborate Slide Deck Private Public

Area of Computing	EYFS	KS1	LKS2	UKS2
Word Processing/ Typing	Touchscreen Drag Select Keyboard Type	Keys Space bar Backspace Caps Lock Ctrl – Control Shift Cursor	Format Font Style Size Colour Genre Audience	Word Processing Copyright Creative Commons Edit Wrap Hyperlink Orientation Audience Readability
Data Handling	Sort Group Same Different	Data Collect Organise Compare Pictogram Title Binary Tree	Spreadsheet Data logging Input Automatic data collection Sensors Online sources Table Cell Columns Rows Total Equals Cell address Bar Graph	Arrange Avatar Chart Collaborative Database Field Group Record Search Sort Present Report Statistics Spreadsheet Auto fit Delimiter Chart Conditional formatting Cell reference Formulae Formula bar Range Axis Text wrapping Filter

Area of Computing	EYFS	KS1	LKS2	UKS2
Presentation of ideas/ Video creation	Video Record	Microphone Voice recording E-book Image Adjust Resize Crop	Weather reporting Greenscreen Presentation Slideshow Slide Media Animation Transition Text box Word Art Embed Format Layer Icons	Approval Blog post Blog Collaborate Vlog Commenting Archive
Animation and game creation	Voice Record Audiobook Story iPad ChatterPix app	Animation Background Sound Edit Save Clipart gallery Font Text Copy Paste	Animation Frames per second Onion Skinning Pause Frame Stop motion	Text based Selection Function Flow of control Step through Game design Customise Interactive Texture Perspective Playability Environment
Photography & digital art Augmented Reality	Camera Photograph Lens Select Colour Brush Effect App	Zoom Landscape Portrait Lighting Flash Composition Capture Exposure	Manipulate Enhance Resize Brightness Crop Contrast Augmented Reality 3-dimensional image Object target Recognition	

Area of Computing	EYFS	KS1	LKS2	UKS2
Sound	Voice Record Audiobook Story iPad ChatterPix app	Microphone Voice recording Sequence Beat Tune Compose Digital instrument Sound Effect Tempo Volume Note Soundtrack Loop Composed	Synthesizer Speakers Layering	
E-Safety Communication/Online relationships	Safe Help Private	Digital footprint Search Key words Appropriate Website Online behaviour Safety Communication Chat Friend request Permission Consent Information sharing Help and advice Trusted adults Internet safety online Purpose Value Content Recognise	Password Security Communication Cyber bullying Reliability Age Restrictions E-safety Login details Privacy Cyberbullying Profile Risk Positive/negative impact Digital assistance Commands Recordings Voice captures	Broadcasting Data analysis Phishing Copyright Citation Creative Commons License Ownership Validity Spoof Malware Screen time Balance Influences Impact Pressures Strategies

Topics Overview – Two Year Cycle

EYFS		Years 1 & 2	Years 3 & 4	Years 5 & 6
This is us Let's celebrate Baa! Quack! Moo! Overground/ Underground	**Cycle A** 2022 - 2023 2024 - 2025	Science- I'm a Survivor History- The Lady with the Lamp Geography- Arctic Adventures History- Life Long Ago History- Castles Geography- In the Jungle	History – Tomb raiders Geography – Mountains and Rivers Science – Light and Dark Science – Healthy Me Geography – Stars and Stripes History – Divide and Conquer	History – Great Greece Geography – Mighty Mayans Science – Space History – Bletchley Park Geography- Across the Ocean Geography – Exciting Explorers
To the rescue! Oh, I do like to be beside the seaside **(No cycle required due to single year group)**	**Cycle B** 2023 – 2024 2025 - 2026	Science- Marvellous Minibeasts History- The Great Fire of London History- Transport through time Science- Growing up Geography- Sink or Swim Geography- Waste Not, Want Not	History – Rotten Romans Geography – Volcanoes History – Heads will roll Geography – It's a Wonderful World History – From Stone Age to Iron Age Geography – My MK	History – Titanic Geography – Rainforests History – Vile Victorians History – Shakespeare's Sagas Geography – Where Land Meets the Sea Science – Fitness or Football

Autumn 1 – Cycle A

EYFS This is Us		Years 1 & 2 I'm a Survivor		Years 3 & 4 Tomb Raiders		Years 5 & 6 Great Greece	
Aut 1 Cycle A	Exploring Technology • To be able to turn on a device (interactive whiteboard, iPad) and access apps (Mini Mash, camera) • To be able to use a pen or finger to drag items around the screen • To be able to explore locations using Google Street **Linked to This is Us topic**	Aut 1 Cycle A	E-Safety – Managing online information, online bullying and Privacy & Security – Project Evolve • To be able to know that the information I put online leaves a digital footprint. • To be able to use keywords in an online search to find key information about a topic. • To be able to recognise whether a website is appropriate for children. • To be able to rate and review informative websites. • To be able to identify kind and unkind behaviour online. • To know how to get help from a trusted adult if content makes us feel sad, uncomfortable, worried or frightened.	Aut 1 Cycle A	Research, E-Safety (Privacy and security) • To be able to discuss known ways of staying safe online. • To know what makes a strong password and the consequences of giving your passwords away. • To be able to recognise/use appropriate comments when communicating online • To be able to consider how reliable information found online can be • To be able to recognise age restrictions and ratings • To be able to reflect on e-safety learning and apply to own digital experiences **Linked to Ancient Egypt topic**	Aut 1 Cycle A	Word processing – Google Docs – Purple Mash • To know what a Word processing tool is for. • To be able to add and edit images into a document. • To know how to use word wrap with images and text. • To be able to change the look of text within a document. • To be able to add features to a document to enhance its look and usability. • To know how to use the sharing capabilities in Google docs. • To know how to use tables within Google Docs to present information. **Linked to Great Greece topic**
	Key Knowledge Children learn to use a device to create an image		Key Knowledge Children consider the choices made online and recognise that actions online can be tracked		Key Knowledge Children will recognise the role they play in using technology safely and how this is achieved, including understanding age restrictions		Key Knowledge Children will learn how different tools in Word work – including adding and editing images and text.

	Children recognise the everyday use of technology – e.g. cameras to record learning, Google Street to view houses Key Vocabulary Screen Drag Select Camera Lens		Children learn how they can search for information and which websites to use Children consider what is kind or unkind online and who to go to for help Key Vocabulary Digital footprint Search Key words Appropriate Website Online behaviour Safety		Children will understand the use of passwords and how to keep them secure Children will understand the impact of how people communicate online Children will recognise differing qualities and reliability in online information and consider this when selecting information to use for research Key Vocabulary Password Security Communication Cyber bullying Reliability Age Restrictions		Children will adapt their work for effect Children will recognise how documents can be created through online collaboration and use the techniques learnt to present information about a topic Key Vocabulary Word Processing Copyright Creative Commons Edit Wrap Hyperlink Orientation Audience Readability

Autumn 1 – Cycle B

EYFS This is Us		Years 1 & 2 Marvellous Minibeasts		Years 3 & 4 Rotten Romans		Years 5 & 6 Titanic	
Aut 1 Cycle B	Exploring Technology • To be able to turn on a device (interactive whiteboard, iPad) and access apps (Mini Mash, camera) • To be able to use a pen or finger to drag items around the screen • To be able to explore locations using Google Street **Linked to This is Us topic**	Aut 1 Cycle B	Multimedia – E-book creation (Focus on retelling a known story, typing and using voice recordings)– Book Creator • To be able to type letters using the keyboard • To be able to record my voice using the microphone • To be able to add a title and selected images/drawing into an e-book • To be able to use layouts and add speech/thought bubbles with typed text • To be able to add voice recordings into an e-book using the microphone • To be able to combine text, image and voice recordings for effect **Linked to Marvellous Minibeasts topic**	Aut 1 Cycle B	E-safety - Health, Well-being and Lifestyle/ Privacy and Security – Project Evolve • To use technology safely, respectfully and responsibly. • To be able to give reasons why someone should only share information with people they choose to and can trust • To be able to explain why spending too much time using technology can sometimes have a negative impact on anyone • To be able to describe how connected devices can collect and share anyone's information with others.	Aut 1 Cycle B	Databases (Yr 5 unit) – Purple Mash • To be able to use a form to record information • To be able to compare paper and computer-based databases • To be able to outline how grouping and then sorting data allows us to answer questions • To be able to explain that tools can be used to select specific data • To be able to explain that computer programs can be used to compare data visually • To be able to apply my knowledge of a database to ask and answer real-world questions
	Key Knowledge Children learn to use a device to create an image Children recognise the everyday use of		Key Knowledge Children develop their knowledge of how technology can be used to create their own media.		Key Knowledge Children understand the need for safety online and consequences of not working safely online. Children understand what can and can't be shared online.		Key Knowledge Children develop their knowledge of databases including collaborative databases.

	technology – e.g. cameras to record learning, Google Street to view houses Key Vocabulary Screen Drag Select Camera Lens		Children understand how to log in to a computer, controlling the mouse cursor to open a program. Children learn about the different keyboard keys and how to use them to type text – this will then be revisited for different purposes throughout the unit – typing a title name, typing speech in a speech bubble etc. Children recognise how they can use a microphone to record their voice and use this to retell a story linked to their topic about minibeasts. Key Vocabulary Keyboard Typing Keys Space bar Backspace Caps Lock Ctrl – Control Shift Cursor Microphone Voice recording E-book Image Adjust Resize Crop		Children consider the impacts of using technology too much Key Vocabulary E-safety Login details Privacy Cyberbullying Profile Risk Positive/negative impact Digital assistance Commands Recordings Voice captures		They learn how to search, sort and create reports from the data entered into fields Key Vocabulary Arrange Avatar Chart Collaborative Database Field Group Record Search Sort Present Report Statistics

Autumn 2 - Cycle A

EYFS Let's Celebrate		Years 1 & 2 The Lady with the Lamp		Years 3 & 4 Mountains and Rivers		Years 5 & 6 Mighty Mayans	
Aut 2 Cycle A	Creating and learning using Technology • To be able to make creative choices when painting online – Purple Mash 2Paint and Paint projects – Firework template and splash effect, Remembrance poppy template • To be able to use a mouse or finger to drag items around the screen – Topmarks maths games **Link to Let's Celebrate Topic**	Aut 2 Cycle A	Coding/Programming – Scratch Jr • To be able to use instructions to program a superhero. (unplugged) • To be able to program a character to grow and shrink. • To be able to program objects to move. • To be able to follow instructions to make a sequence. • To be able to create programs to achieve an effect. • To be able to evaluate different programs that have been created.	Aut 2 Cycle A	Coding/Programming – Scratch – Chase games • To be able to decompose a premade game • To know what a sprite is and create a sprite in Scratch. • To know what a stage is and how to create a stage in Scratch. • To be able to select a sprite and change its costume • To be able to set user inputs – controlling movement	Aut 2 Cycle A	Coding/Programming – 2code - Purple Mash/ Micro:Bits • To be able to begin simplifying code. • To know how to create a playable game. • To be able to understand what a simulation is and program using 2code • To know what decomposition and abstraction are in Computer Science. • To be able to use decomposition to make a plan of a real-life situation. • To be able to understand how to use friction in code. • To be able to begin understanding what a function is and how functions work in code. • To be able to understand what the different variable types are and how they are used differently. • To be able to understand how to create a string. • To be able to begin exploring text variables when coding.

							• To be able to understand what concatenation is and how it works. **Linked to Bletchley Park Code Breakers topic**
	Key knowledge Children select different colours and brush types/ sizes Children drag and drop various objects on the screen – including using this to create digital art Children recognise how technology can be used to support learning in other areas Key Vocabulary Select Colour Brush Effect		Key knowledge Children will develop an understanding of how programming a sequenced code can make a sprite move on a screen Children will learn how different coding blocks cause different things to happen and experiment with this Children will develop an understanding of combinations of code to achieve given effects. Key Vocabulary Instructions Program Grow and Shrink Coding blocks Move Sequence Evaluate		Key Knowledge Children will build on prior knowledge of Scratch Jr and utilise further functions in Scratch Children will understand how to create a sprite and use coding blocks to control the movement of it. Children will be able to create stages as levels for a chase game. Children will be able to use various coding blocks, such as control blocks and forever loops to code the movement of a sprite (using either a keypad or mouse) Key Vocabulary Decompose Sprite Costume Stage Coding blocks – motion, looks, sound Control blocks Forever loop		Key Knowledge Children extend their skills in coding using 2Code and Micro:Bits in a variety of ways. They learn to create simplified code to make their programming more efficient Children learn how algorithms can be used in everyday life for physical systems, e.g. the sequence of traffic lights and create a simulation of this. Children can use concatenation to create a program by linking functions, strings and variables to produce a range of outputs. Key Vocabulary Simplify Efficiency Decomposition Abstraction Friction Functions Concatenation

Autumn 2 - Cycle B

EYFS Let's Celebrate		Years 1 & 2 Great Fire of London		Years 3 & 4 Volcanoes		Years 5 & 6 Rainforests	
Aut 2 Cycle B	Creating and learning using Technology • To be able to make creative choices when painting online – Purple Mash 2Paint and Paint projects – Firework template and splash effect, Remembrance poppy template • To be able to use a mouse or finger to drag items around the screen – Topmarks maths games **Link to Let's Celebrate Topic**	Aut 2 Cycle B	Programming – Beebots • To be able to sequence instructions • To be able to recognise cause and effect when pressing buttons. • To know how to program a Beebot to move. • To be able to program a Beebot to move in a sequence to reach an end point. (2 lessons) • To be able to debug errors and evaluate to improve sequences (2 lessons)	Aut 2 Cycle B	Data Logging – NCCE – Data and Information - Weather Forecasts • To know how to log data taken from online sources within a spreadsheet • To be able to understand how weather forecasts are made • To be able to design a weather station using technology. • To be able to design an automated machine to respond to sensor data for extreme weathers. • To know how to use green screen technology in a video to present a weather forecast (2 lessons)	Aut 2 Cycle B	Networks – NCCE – Systems and Searching - Raspberry Pi • To know how to use a search engine • To be able to describe how search engines select results • To be able to recognise why the order of results is important, and to whom • To be able to recognise how we communicate in different ways using technology • To be able to evaluate different methods of online communication **Link to Rainforests topic – researching information**

	Key knowledge Children select different colours and brush types/ sizes Children drag and drop various objects on the screen – including using this to create digital art Children recognise how technology can be used to support learning in other areas Key Vocabulary Select Colour Brush Effect		Key Knowledge Children will develop an understanding of how programming a sequenced code can make a Beebot move Children will explore the effect of the different Beebot buttons and how combinations of them will move the Beebot Children will input code to reach end points and explore the effectiveness of the code inputted through testing and debugging Children will apply this to challenges to demonstrate their understanding Key Vocabulary Command Instructions Sequence Program Logical reasoning Debug Evaluate		Key Knowledge Children will develop an understanding of how technology is used to help predict and prepare for expected weathers including extreme weathers. Children will use data loggers to track conditions in different areas of school and recognise how spreadsheets can organise this data. Children will develop an understanding of how weather forecasts are reported using green screen technology. Key Vocabulary Spreadsheet Data logging Input Automatic data collection Sensors Online sources Weather reporting Greenscreen		Key Knowledge Children will develop their understanding of digital devices, with an initial focus on inputs, processes, and outputs. Children will also compare digital and non-digital devices. Children will be introduced to computer networks, including devices that make up a network's infrastructure, such as wireless access points and switches. Children will discover the benefits of connecting devices in a network. Key Vocabulary Refine Index Crawler Bot Ordering Ranking Links Algorithm Search engine optimisation (SEO), Communication

Spring 1 – Cycle A

EYFS Baa! Quack! Moo!		Years 1 & 2 Arctic Adventures		Years 3 & 4 Light and Dark		Years 5 & 6 Space	
Spr 1 Cycle A	Creating using Technology – Sound Effects and voice recording • To know that voices can be recorded using technology • To be able to explore premade sound recordings (Stories on the Tonie Box) • To be able to explore premade sound recordings on ChatterPix • To be able to press the record button and add my own voice **Linked to farm animal topic**	Spr 1 Cycle A	Multimedia – Purple Mash (Making Music) • To be able to explore, edit and combine sounds using 2Sequence. • To know how to edit and refine composed music. • To know about how music can be used to express feelings and create tunes which depict feelings. • To be able to upload a sound from a bank of sounds into the Sounds section. • To record and upload environmental sounds into Purple Mash. • To use these sounds to create tunes in 2Sequence. **Linked to Arctic Adventures topic**	Spr 1 Cycle A	Computational thinking/coding – Scratch chase games • To be able to debug coding and fix errors • To be able to set user inputs – controlling movement • To be able to set variables in Scratch – point scoring • To be able to add new levels and an end goal • To be able to add sound and visual effects • To be able to test, debug and evaluate coded chase games	Spr 1 Cycle A	Text Adventures - 2Create a story - Purple Mash – Alien Adventure Stories • To find out what a text-based adventure game is and to explore an example made in 2Create a Story. • To use 2Connect to plan a 'Choose your own Adventure' type story. • To use 2Connect plans for a story adventure to make the adventure using 2Create a Story. • To introduce an alternative model for a text adventure which has a less sequential narrative. • To use written plans to code a map-based adventure in 2Code. **Linked to Space topic**
	Key knowledge Children recognise how technology can be used to listen to		Key Knowledge Children will develop an understanding of how music can be developed digitally		Key Knowledge Children will learn how to debug coding of others *(Link to previous Science unit topic – water cycles)*		Key Knowledge Children will understand what a text adventure is and the difference between a map-

	stories through voice recordings Children will learn how to record their own voices onto pictures Key Vocabulary Voice Record Audiobook Story iPad ChatterPix		Children will explore the program 2 Sequence and ways to manipulate digital music Children will utilise their skills to create tunes using 2 Sequence Key Vocabulary Sequence Beat Tune Compose Digital instrument Sound Effect Tempo Volume Note Soundtrack Loop Composed		Children will continue to develop the chase games from the previous unit by adding in more complexity – scoring systems, levels, sound and visual effects. Children will test and debug their own work and evaluate the effectiveness of their coding Key Vocabulary Debug Sensing blocks Variables Levels Scoring		based adventure and a sequential story-based adventure. They will use this understanding to plan their own using 2Connect to note down ideas. Children will learn to use a range of functions in 2 Create a story to develop a 'choose your own adventure' story Key Vocabulary Text based Selection Function Flow of control Step through

Spring 1 – Cycle B

EYFS Baa! Quack! Moo!		Years 1 & 2 Transport Through Time		Years 3 & 4 Heads will Roll		Years 5 & 6 Vile Victorians	
Spr 1 Cycle B	Creating using Technology – Sound Effects and voice recording • To know that voices can be recorded using technology • To be able to explore premade sound recordings (Stories on the Tonie Box) • To be able to explore premade sound recordings on ChatterPix • To be able to press the record button and add my own voice **Linked to farm animal topic**	Spr 1 Cycle B	Animated Stories – Purple Mash – Focus upon creating images and backgrounds • To be able to explore the tools of 2Create a Story's My Simple Story level. • To know how to save the page they have created, add additional pages and overwrite the file. • To know how to animate a picture, add sound effects, created music and voice recordings • To be able to apply the use of tools to create a story • To use the copy and paste feature to create additional pages. • To be able to share created story books with others. **Linked to Transport topic**	Spr 1 Cycle B	Handling data – Purple Mash (2Calculate - Spreadsheets - Crash Course) • To be able to understand what a spreadsheet looks like. • To be able to navigate around a spreadsheet and enter data. • To be able to learn new vocabulary related to spreadsheets. • To know how to use the totalling tools. • To know how to use a spreadsheet to answer questions about data. • To be able to add and edit data in a table layout. • To be able to find out how spreadsheet programs can automatically create graphs from data. • To be able to learn about describing cells using their addresses.	Spr 1 Cycle B	E-Safety –Self-image & identity – Purple Mash/ Project Evolve • To be able to identify benefits/risks of devices broadcasting the user's location and sharing data in software • To be able to identify secure sites by looking for privacy seals of approval • To know the meaning of a digital footprint and understand how/why people create a virtual image of themselves as a user. • To be able to begin understanding how information online can persist and give away details of those who share or modify it. • To be able to explain how identity online can be copied, modified and altered. • To be able to demonstrate how to make responsible

							choices about having an online identity • To be able to identify and evaluate online content relating to gender, race, religion and culture
	Key knowledge Children recognise how technology can be used to listen to stories through voice recordings Children will learn how to record their own voices onto pictures Key Vocabulary Voice Record Audiobook Story iPad ChatterPix app		Key Knowledge Children will build upon their learning about e-books from Book Creator and have more control over the creation of images for their own book design. Children will learn how to use the different drawing tools to create a picture on the page, animate it and play their animation. They will be able to use this to create their own story. Children will be able to open previously saved work and save new changes by overwriting the file Children will learn about how to share their work with others. Key Vocabulary Animation Background Sound Edit Save Clipart gallery Font Text Copy Paste		Key Knowledge Children can navigate around a spreadsheet, finding specified locations in a spreadsheet, explaining what rows and columns are and enter data into cells. Children can create a table of data on a spreadsheet and use tools to automatically total data. Children can use calculations to answer questions about data and use a spreadsheet program to automatically create charts and graphs from data. Children can describe a cell location in a spreadsheet using the notation of a letter for the column followed by a number for the row. Key Vocabulary Table Data Cell Columns Rows Total Equals		Key Knowledge Children use the example game and further research to refresh their memories about risks online and the steps they can take to protect themselves Children understand how what they share impacts upon themselves and upon others in the long-term. Children know about the consequences of promoting inappropriate content online and how to put a stop to such behaviour when they experience it or witness it as a bystander. Children can take more informed ownership of the way that they choose to use their free time. They recognise a need to find a balance between being active and digital activities. Children can give reasons for limiting screen time. Children can talk about the positives and negative aspects

					Cell address Bar Graph		of technology and balance these opposing views. Key Vocabulary Broadcasting Data analysis Phishing

Spring 2 – Cycle A

EYFS Overground/Underground		Years 1 & 2 Life Long Ago		Years 3 & 4 Healthy Me		Years 5 & 6 Bletchley Park	
Spr 2 Cycle A	Taking own photographs and creating videos • To know how to access the camera and where the lens is • To be able to take photographs of learning • To be able to record videos of learning and story telling • To know that photos and videos can be shared with others	Spr 2 Cycle A	E-Safety – Online relationships – Project Evolve • To be able to discuss and give examples of how we communicate online and know the risks of communicating with people we don't know • To know which information we should and shouldn't share online and what permissions we have/should give to others • To know who to turn to for help with concerns about consent and permission online • To be able to explain how others may feel if their consent is not obtained before sharing things about them online	Spr 2 Cycle A	Presenting - Google Slides – Purple Mash • To be able to create new pages in a presentation. • To be able to add media to a presentation • To be able to add shapes and lines to a presentation. • To be able to add animations into a presentation. • To know how to present a presentation and evaluate the success of the slides. Presenting - Adobe Spark Video – Digital guide (Literacy link for 1 week) • To know how to change layout and theme in Spark • To know how to add text in Spark • To know how to add images and icons in Spark • To be able to add voice overs in Spark • To be able to record a video and embed it in Spark **Linked to Healthy Me topic**	Spr 2 Cycle A	E Safety – Privacy and Copyright/Ownership - Purple Mash • To be able to gain a greater understanding of the impact that sharing digital content can have. • To know how to protect privacy by maintaining secure passwords • To be able to learn about how to reference sources in our work • To be able to understand what reliability means
	Key knowledge Children learn how to use technology to		Key Knowledge Children recognise risks of communicating with others online –		Key Knowledge Children develop an understanding of how technology can be used to		Key Knowledge Children secure their understanding of how to keep

	record their own experiences in photos and videos Children learn about the camera lens and where to aim this to take a photograph or video Children understand how to access camera apps on the iPad or turn on a digital camera Children recognise that their photographs and videos can be shared with others Key Vocabulary Digital camera App Photograph Video Record Lens		especially unknown people in public forums such as chatting during games or adding unknown people as friends Children understand that they can or can not give consent to others to share things online and they have to consider this about other people too Children identify who they can go to for help Key Vocabulary Communication Chat Friend request Permission Consent Information sharing help and advice Trusted adults		present learning across the curriculum. They learn about the options and limitations of Google Slides and Adobe Spark Video They explore how to access tools within the Google Slides and Adobe Spark Video – adding different types of slides, adding media (Images and videos), text, shapes and lines Children position and size items on the screen, considering the layers. They consider design choices they can make to interest the audience appropriately Key Vocabulary Presentation Slideshow Slide Media Animation Transition Text box Word Art Embed Format Layer Icons		safe online – sharing content and password use Children understand the use of other people's content and how they must reference this Children consider the reliability of different information online and how this impacts sources used Key Vocabulary Copyright Citation Creative Commons License Ownership Validity Spoof Malware

Spring 2 – Cycle B

EYFS Overground/Underground		Years 1 & 2 Growing Up		Years 3 & 4 It's a Wonderful World		Years 5 & 6 Shakespeare's Sagas	
Spr 2 Cycle B	Taking own photographs and creating videos • To know how to access the camera and where the lens is • To be able to take photographs of learning • To be able to record videos of learning and story telling • To know that photos and videos can be shared with others	Spr 2 Cycle B	Networks - Researching - Effective searching – Purple Mash • To know that the internet can be used to research. • To be able to use words linked with searching online • To be able to identify parts of a search engine • To be able to use accessibility features to help read information – speech tools • To be able to use sensible searches to find answers to questions ***Link with EYFS class – research information to share with the younger children about dinosaurs/fossils for their topic*** ***Begin building links for Transition***	Spr 2 Cycle B	Stop Motion Animations – 2Animate - Purple Mash • To be able to decide what makes a good animated film or cartoon and discuss favourite animations. • To know how animations are created by hand or using technology. • To be able to find out how 2Animate animations can be created in a similar way, using technology. • To know about onion skinning in animation. • To be able to add backgrounds and sounds to animations. • To know how stop motion animation works. • To be able to share animations with others.	Spr 2 Cycle B	Spreadsheets – Google Sheets – Purple Mash • To know what a spreadsheet looks like. • To be able to navigate and enter data into cells. • To be able to introduce some basic data formulae in Sheets. • To be able to demonstrate how the use of Sheets can save time and effort when performing calculations. • To know how to use a spreadsheet to model a situation. • To be able to demonstrate how spreadsheets can make complex data clearer by manipulating the way it is presented. • To be able to use formulae for percentages, averages, max and min into spreadsheets. • To know how to create a variety of charts and graphs to understand data.

	Key knowledge Children learn how to use technology to record their own experiences in photos and videos Children learn about the camera lens and where to aim this to take a photograph or video Children understand how to access camera apps on the iPad or turn on a digital camera Children recognise that their photographs and videos can be shared with others Key Vocabulary Digital camera App Photograph Video Record Lens		Key Knowledge Children recognise the internet as a network which includes the WWW. They know of different browsers which they can use to access search engines to use for research. Children understand how to type key words into search engines to get certain results Children collect information gathered from searching using tools to support them Key Vocabulary Search engine Website WWW – World Wide Web Internet Web address Web page Browser Search bar Results		Key Knowledge Children learn how animation works – on paper in a flick book and then within frames using technology Children understand how onion skinning builds animation Children recognise how stop motion animation is used within films and explore making their own. Key Vocabulary Animation Frames per second Onion Skinning Pause Frame Stop motion		Key Knowledge Children build on previous spreadsheet learning using 2Calculate and apply this to Google Sheets They learn to navigate around Google Sheets to access different tools Children understand how to filter and calculate data in the spreadsheets using basic formulae Children learn to present the data in the spreadsheet using different charts Children apply their spreadsheet learning to real life situations Key Vocabulary Spreadsheet Auto fit Delimiter Chart Conditional formatting Cell reference Formulae Formula bar Range Axis Text wrapping Filter

Summer 1 – Cycle A

EYFS To the Rescue!		Years 1 & 2 Castles		Years 3 & 4 Stars and Stripes		Years 5 & 6 Across the Ocean	
Sum 1 Cycle A	Exploring the use of Beebots and remote-control vehicles • To be able to explore how buttons control technology • To be able to experiment with moving BeeBots and remote-control vehicles • To know how to select certain buttons to control which direction the robot moves • To know that BeeBots need a sequence of buttons pressed	Sum 1 Cycle A	Handling data – Pictograms and Binary trees – Pictograms and Questioning - Purple Mash • To be able to understand that data can be recorded in different ways • To be able to create a pictogram • To know how to separate information into yes/no • To be able to construct a binary tree to identify items **Linked to Science unit – seasons and weather**	Sum 1 Cycle A	Hardware Investigators – Purple Mash • To know the parts which make up a desktop computer • To be able to explain the function of computer parts • To be able to recognise inputs and outputs • To know how to use a variety of inputs and outputs Making Music – 2Sequence/Busy Beats – Purple Mash • To be able to identify and discuss the main elements of music: Pulse, Rhythm, Tempo, Pitch, Texture • To be able to understand and experiment with rhythm and tempo. • To know how to create a melodic phrase using digital tools • To be able to compose a piece of electronic music.	Sum 1 Cycle A	Blogging – 2Blog - Purple Mash • To be able to identify the purpose of writing a blog. • To be able to identify the features of successful blog writing. • To be able to plan the theme and content for a blog. • To know how to write a blog and a blog post. • To be able to consider the effect upon the audience of changing the visual properties of the blog. • To know how to contribute to an existing blog. • To know the importance of commenting on blogs. • To be able to peer-assess blogs against the agreed success criteria. • To be able to understand how and why blog posts and comments are approved by the teacher.

	Key knowledge Children begin to learn about how we can control technology and what we can make it do – focused on moving and turning Children learn about combining sequences of moves to make something happen and experiment with this Key Vocabulary BeeBot Remote Control Buttons Control Left Right Forwards Backwards Clear Pause		Key Knowledge Children sort data into pictograms using appropriate images to represent the data. They are able to interpret what pictograms show. Children understand the use of yes/no questions to separate items and understand what a binary tree is. Children consider the limitations of these as data handling tools when answering questions. Key Vocabulary Data Collect Organise Compare Pictogram Title Binary Tree		Key Knowledge Children learn to identify and name different components of a computer or digital device They understand the purpose of different components and how they work together Children recognise and can sort inputs and outputs Key Vocabulary Components CPU Graphics card Hard Drive Motherboard Monitor Network card Peripherals RAM Software Input Output Synths/ synthesizer Speakers *Links to music curriculum vocabulary*		Key Knowledge Children understand the purpose of a blog and the features used in the text type Children collaborate to plan and create a blog with a specific purpose and then create blog posts within the blog Children comment on blog posts written by others applying their learning about appropriate communication online Children recognise the need for approval by adults in line with cyber bullying Key Vocabulary Approval Blog post Blog Collaborate Vlog Commenting Archive

Summer 1 – Cycle B

EYFS To the Rescue!		Years 1 & 2 Sink or Swim		Years 3 & 4 From Stone Age to Iron Age		Years 5 & 6 Where Land Meets the Sea	
Sum 1 Cycle B	Exploring the use of Beebots and remote-control vehicles • To be able to explore how buttons control technology • To be able to experiment with moving BeeBots and remote-control vehicles • To know how to select certain buttons to control which direction the robot moves • To know that BeeBots need a sequence of buttons pressed	Sum 1 Cycle B	Technology in our lives – NCCE - IT around us - Raspberry Pi • To be able to identify uses of technology in school • To be able to identify uses of technology beyond school • To know the benefits of technology in everyday situations (E.g. in a shop) • To be able to recognise the safety involved in using technology in different ways • To be able to recognise choices we make when using technology for different purposes	Sum 1 Cycle B	Writing for different purposes/audiences – Purple Mash • To be able to explore how design choices can affect the impact on the audience • To know which programmes to use for different purposes • To know how to adapt design choices to suit the audience – font style, size, colour • To be able to apply understanding of different programmes for different writing purposes (2 or 3 sessions)	Sum 1 Cycle B	Game Designers – Purple Mash • To be able to explore the 2DIY 3D tool. • To be able to begin planning a game. • To know how to design the game environment. • To know how to design the game quest to make it a playable game. • To be able to finish and share the game.
	Key knowledge Children begin to learn about how we can control technology and what we can make it		Key Knowledge Children consider how technology is used in different situations and the benefits of this to daily life.		Key Knowledge Children evaluate how technology design features have been used to suit different audiences and writing genres		Key Knowledge Children review and analyse computer game designs, describing which elements make them successful

	do – focused on moving and turning Children learn about combining sequences of moves to make something happen and experiment with this Key Vocabulary BeeBot Remote Control Buttons Control Left Right Forwards Backwards Clear Pause		Children recognise how technology works together to support us in different activities/tasks Children consider how safety requirements change depending on the type and use of technology Children recognise choices they can make about the type of technology to use in different situations Key Vocabulary Information Technology Devices Computer Scanner Printer Barcodes		Children build on previous learning about presenting information using text and apply their understanding of desktop publishing programmes to different writing purposes Key Vocabulary Format Font Style Size Colour Genre Audience		Children make design choices to suit a theme using tools to support them Children use their understanding of uploading images or drawing them to create game environments Children use their understanding of sound and animation to bring characters to their game Children consider the playability of their design and evaluate throughout the process Key Vocabulary Game design Customise Interactive Texture Perspective Playability Environment

Summer 2 – Cycle A

EYFS Oh, I do like to be beside the seaside		Years 1 & 2 In the Jungle		Years 3 & 4 Divide and Conquer		Years 5 & 6 Exciting Explorers	
Sum 2 Cycle A	Exploring computing facilities in school – visit to the computer suite Learning to log on – peer support • To be able to explore and use parts of computers – monitor, mouse and keyboard • To be able to log onto a computer with help • To be able to click and drag to move a cursor with a mouse • To be able to begin typing simple words – e.g. name	Sum 2 Cycle A	Technology in our lives – Digital Photography • To know ways to capture a digital image • To be able to adjust the format from landscape to portrait and reflect on when to use each. • To be able to make choices when composing an image • To be able to evaluate photographs and retake them to improve the image • To be able to explore and explain the effect of light in photographs • To know that images can be edited and some are fake	Sum 2 Cycle A	Photography, digital art and AR • To be able to confidently take and manipulate photos • To know how to create/enhance a digital image using a range of tools, pens, brushes and effects • To be able to enhance digital images using crop, brightness, contrast & resize • To be able to manipulate shapes to create digital art. • To be able to create images and bring it into the surroundings through AR. • To know how to add multiple objects through AR to explain a concept. **Link to Vikings and Anglo-Saxons – themed digital art and AR**	Sum 2 Cycle A	Computing Systems and Networks – NCCE – Communication and Collaboration • To be able to explain the importance of internet addresses • To be able to recognise how data is transferred across the internet • To know and apply the benefits of collaborating online • To know the safety aspects of communicating online Quizzes/Surveys – 2DIY, 2Quiz/Google Forms – Purple Mash • To be able to create a picture-based quiz for young children. • To be able to learn how to use the question types within 2Quiz. • To know how to make a quiz that requires the player to search a database. To know how to create a survey using Google Forms

	Key knowledge Children begin to learn about the difference between tablets/ interactive whiteboards and desktop computers They recognise how to control a cursor with a mouse and begin practising this by moving objects on the screen With support, they learn to log on to the computer and access Purple Mash Key Vocabulary Desktop computer Tablet Interactive Whiteboard Monitor Mouse Cursor Click Drag Keyboard Type		Key Knowledge Children will recap the basics of taking photographs from previous learning They will extend this through enhancing their photographs through creative choices – landscape/portrait and zooming in using the lens They will evaluate the effectiveness of photographs taken and retake photographs as needed Children will look at lighting options and how to make a photograph clearer Children will begin to recognise that some images are fake and consider this when viewing images online Key Vocabulary zoom landscape portrait lighting Flash composition capture exposure		Key Knowledge Children review previous learning about taking appropriate photographs They learn to manipulate images and enhance them using different tools Children apply these methods to create pieces of digital art Children understand how Augmented Reality can bring 2D images into a 3D space and explore how this is used in museums and games Key Vocabulary Manipulate Enhance Resize Brightness Crop Contrast Augmented Reality 3-dimensional image Object target Recognition		Key Knowledge Children build upon previous learning about networks – they explore how data is transferred over the internet using web and IP addresses and follow protocols/rules to communicate with each other They recognise the structure of data packets and how data is transferred over the internet Children recognise how we can communicate in different ways over networks and choices about which method to use for different purposes, including safety involved Key Vocabulary Protocols Web Address IP Address – Internet Protocol address DNS – Domain Name Server Data Packets Header Data Payload Chat Collaborate Slide Deck Private Public

							Key Knowledge Children develop an understanding of how quizzes work online They consider appropriate question types for different audiences and how to use tools to select these in different programmes – 2Quiz and Google Forms They evaluate the effectiveness of different quiz/survey programmes for different purposes Key Vocabulary Quiz Question type – multiple choice, labelling, text based, cloze

Summer 2 – Cycle B

EYFS Oh, I do like to be beside the seaside		Years 1 & 2 Waste Not Want Not		Years 3 & 4 My MK		Years 5 & 6 Fitness or Football	
Sum 2 Cycle B	Exploring computing facilities in school – visit to the computer suite Learning to log on – peer support • To be able to explore and use parts of computers – monitor, mouse and keyboard • To be able to log onto a computer with help • To be able to click and drag to move a cursor with a mouse • To be able to begin typing simple words – e.g. name	Sum 2 Cycle B	E Safety – Digital Resilience ***linked to PSHE unit*** • To be able to understand what the internet is and how people communicate online - the benefits. • To know how people find things out and communicate safely with others online. • To be able to understand the purpose and value of the internet in everyday life • To know that some content on the internet is factual and some is for entertainment e.g. news, games, videos • To be able to understand that information online might not always be true.	Sum 2 Cycle B	Computing systems and networks- NCCE – Connecting Computers and the Internet - Raspberry Pi • To know how a network can share information • To be able to explore connections between digital devices • To be able to recognise the physical components in a network • To be able to describe how networks connect to other networks • To be able to recognise how networked devices make up the internet • To be able to explain how websites can be shared on the WWW.	Sum 2 Cycle B	E-safety - Health, Well-being and Lifestyle – Project Evolve • To understand the importance of balancing game and screen time with other parts of their lives, e.g., explore the reasons why they may be tempted to spend more time playing games or find it difficult to stop playing and the effect this has on their health. • To identify the positive and negative influences of technology on health and the environment. • To be able to describe some strategies to promote health and well-being with technology • To be able to recognise and discuss pressures that technology can place on someone and how to manage this.

	Key knowledge Children begin to learn about the difference between tablets/ interactive whiteboards and desktop computers They recognise how to control a cursor with a mouse and begin practising this by moving objects on the screen With support, they learn to log on to the computer and access Purple Mash Key Vocabulary Desktop computer Tablet Interactive Whiteboard Monitor Mouse Cursor Click Drag Keyboard Type		Key Knowledge Children learn that the internet is a system that enables computers and other devices to send each other information. We can use devices to find and share information on the internet, communicate with others, watch videos and listen to music. They learn about the benefits of the internet and how to use it safely Children recognise that everyone can add to the internet so the content cannot always be trusted Key Vocabulary Internet digital devices safety online purpose value content recognise		Key Knowledge Children learn about how computer networks work – both locally and wider They name and understand the links between different devices in a network Children understand how people access websites over networks Key Vocabulary Network Connection Network switch Server WAP – Wireless Access Point Network cable Socket Router Network security LAN WAN Website Web page Browser		Key Knowledge Children consider the impacts of technology on our lives related to the time we spend using it They think about the impact on sleep routines and how this can affect people Children consider sources of advice for healthy choices when using technology Key Vocabulary Screen time Balance Influences Impact Pressures Strategies