EYFS			
Development matters age range	**ELG framework**		**Programme of Study**
EYFS Three and Four-Year-Olds	Personal, Social and Emotional Development		Remember rules without needing an adult to remind them
	Physical Development		Match their developing physical skills to tasks and activities in the setting
	Understanding the World		Explore how things work
Reception	Personal, Social and Emotional Development		Show resilience and perseverance in the face of a challenge Know and talk about the different factors that support their overall health and well-being: - Sensible amounts of screen time
	Physical Development		Develop their small motor skills so they can use a range of tools competently, safely and confidently
	Expressive Arts and Design		Explore, use and refine a variety of artistic effects to express their ideas and feelings
ELG	Personal, Social and Emotional Development	Managing self	Be confident to try new activities and show independence, resilience and perseverance in the face of challenge Explain the reasons for rules, know right from wrong and try to behave accordingly
	Expressive Arts and Design	Creating with materials	Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function

Key stage 1 National Curriculum

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

Year 1						
Overview	**We are digital artists**	**We are Beebot programmers**	**We are computer scientists**	**We are digital photographers**	**We are data scientists on a mini beast hunt**	**We are digital creators**
National Curriculum	Digital Literacy: Recognising common uses of information technology. Logging in and saving work. How to create digital art using an online paint tool. E-safety. Information Technology: Locate where keys are on the keyboard. Developing basic mouse skills.	Children use Bee-Bots to navigate an area and construct simple algorithms, through a story.	Children learn how computers handle information by exploring 'unplugged' algorithms completing tasks away from the computer.	Children take and manipulate digital photographs, including adding images found via a search engine.	Children learn about what data is and how it can be represented and use these skills to show the findings of a mini beast hunt.	Children learn to appreciate the value of computers, understanding that they have helped humans complete unimaginable tasks and achievements.
Key skills	Digital Literacy: Recognising common uses of information technology. Logging in and saving work. How to create digital art using an online paint tool. E-safety. Information Technology: Locate where keys are on the keyboard. Developing basic mouse skills.	Computer science: Learning how hardware works by exploring it. Constructing a series of instructions into a simple algorithm. Applying computing concepts to real world situation	Computer science: Learning how hardware works by exploring it. Constructing a series of instructions into a simple algorithm. Applying computing concepts to real world situation.	Digital literacy: Using technology purposefully to create, organise, store, manipulate and retrieve digital content. E-safety. Computer science: Using logical reasoning to predict the behaviour of simple programs. Information technology: Using cameras or tablets to take photos	Digital literacy: Using technology purposefully to create, organise, store, manipulate and retrieve digital content. Information technology: Recognising uses of technology beyond school.	Digital literacy: Using technology purposefully to create, organise, store, manipulate and retrieve digital content.
Outcomes	Learning about computers. Using Sketchpad to create digital prints. Developing mouse skills. Create paintings by layering concentric shapes. Create pictures to retell scenes of stories. Create a digital self-portrait.	Exploring the Beebot device. Making an explanatory video. Being a programmer. Programming Beebots with specific instructions to reach a destination. Directing a Beebot on a Beebot themed map.	Creating an algorithm. Following an algorithm to draw a creature. Understanding inputs and outputs. Using decomposition to break a process into steps. Debugging a set of instructions	Designing stories using photos and sequencing skills. Taking photos. Editing photos. Using crop too. l Using a creative layout and adding text and decorative effects.	Exploring the meaning of the word 'data'. Using online software, children represent data. Creating a chart or pictogram and database. Design a way to gather and present data.	Learning about types of digital content. Using online drawing software. Using the skill of sequencing. Following instructions to build something and debugging when necessary. Recording data in a spreadsheet or table.
Overview	Digital prints, digital paintings and digital self-portraits.	Retelling a story using Beebots.	Creating an algorithm	Photo collage	Computerised invention to gather and present data.	A school-made rocket

Year 2

Unit	We are computer inventors	We are digital typers	We are Scratch Jr programmers	We are debuggers	We are data scientists on board the ISS	We are stop motion creators
Overview	Children learn about inputs and outputs, how computers are used in the wider world and design their own computerised invention.	Pupils write simple messages to friends using word processing skills and learn about being safe online (who do we talk to online?)	Using Scratch Jr, children programme a familiar story and an animation of an animal, making their own musical instruments and follow an algorithm to record a joke.	Identifying problems with code to diagnose and correct errors (debugging).	Building on their own understanding of how computers sense what's going on around them, children learn how this can be used in the context of keeping astronauts healthy when on board the ISS.	Children tell a story by exploring how to create an animation using stop motion technology
National Curriculum	Computer Science: Learning about inputs and outputs. Information technology: Understand what a computer is and the role of its components.	Digital Literacy: Using word processing software to type and reformat text. Understanding the importance of staying safe online.	Computer science: Creating and debugging simple programs. Using logical reasoning to predict the behaviour of simple programs. Understanding what algorithms are. Digital literacy: Using technology to create digital content.	Computer science: Creating and debugging simple programs. Using logical reasoning. Understanding what algorithms are.	Digital Literacy: Using technology to create and label images and to put data into a spreadsheet. Computer science: Consider inputs and outputs to understand how sensors work.	Digital Literacy: Using technology to create, organise, store, manipulate and retrieve digital content. Information technology: Understanding how to use tablets or computers to take photos
Key skills	Name the different parts of a computer. Label a robot to identify the inputs it requires. Develop understanding of what a computer is. Design their own inventions, which include inputs and outputs. Explore computers in the real world. Learn about the layout of a keyboard and touch typing.	Learn about word processing and text documents. Edit and format images in a text document. Copy and paste text. Create digital posters.	Dragging blocks and running code. Programming their own animals. Create a musical instrument and use the microphone option. Programme their own joke. Programme a story.	Learning to follow instructions carefully. Learning that computers use algorithms to make predictions. Explore Lightbot to direct a robot through a maze. Develop understanding of abstraction. Physically construct a robot.	Learning about the ISS (International Space Centre) and how computers are used to collect data. Developing mouse and keyboard skills. Collecting and presenting data. Creating algorithms. Interpreting data	Creating a stop motion. Planning an animation through a storyboard. Creating an animation. Reviewing animations.
Outcomes	Designing an invention which includes inputs and outputs.	Creating digital posters	Programme a well-known story.	Creating a moving digital character by listening to instructions and debugging.	Creating an algorithm for growing a plant in space.	Creating their own animations using a storyboard.

Key Stage 2 National Curriculum

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

Year 3

Unit	We are email professionals	We are computer experts	We are Top Trumps Databases creators	We are book trailers creators	We are Scratch programmers	We can use Logo
Overview	Pupils learn how to send emails, including attachments and how to be responsible digital citizens.	Children learn about the different parts of a computer through role-play and develop their understanding of how they follow instructions. To understand how computers communicate, children learn about networks and how they are used to share information	Developing their understanding of data and databases, children play with and create their own Top Trumps cards, learning how to interpret information by ordering and filtering.	Developing their video skills, pupils create a book trailer, storyboarding their trailers before then filming and editing their videos, adding effects such as transitions, music, voice and text.	Using Scratch, with its block-based approach to coding, pupils learn to tell stories and create simple games.	Children use Logo to programme Probots and use Turtle academy to create shapes, signs and journeys
National Curriculum	Digital Literacy: Learn about cyberbullying and fake emails. Understanding the purpose of emails.	Information Technology: Understanding what different components of a computer do. Computer science: Understanding that programs execute by following precise and unambiguous instructions.	Digital Literacy: Using technology purposefully to create, organise, store, manipulate and retrieve digital content, including searching for relevant information.	Digital Literacy: Using technology purposefully to create, organise, store, manipulate and retrieve digital content, including searching for relevant information.	Computer science: Using logical reasoning to explain how simple algorithms work. Designing, writing and debugging programs. Solving problems. Using sequence, selection, and repetition in programs.	Computer science: Understanding that programs execute by following precise and unambiguous instructions. Using logical reasoning to explain
Key skills	Learn about emails and send an email. How to add attachments to emails. Use of positive language in emails. What Cyber Bullying is and what to do if it happens. Learn about spam, junk and phishing emails.	Learn about inputs and outputs. Consolidate understanding of different components of a computer. Create artwork by following an algorithm. Develop understanding of the purpose of different components of computers. Learn the terms 'network', 'device' and 'wireless'. Identify different components of their school network. Create an animation to show understanding of how a file is shared.	Learn the meanings of records, fields and data. Sort and filter data using a database. Represent data from a database	Create a storyboard. Take photos and videos. Import footage into film editing software and record and add sounds. Learn about transitions in videos.	Explore scratch and the functionality of the different blocks available. Create musical instruments. Remix an animation. Play 'Robot Bop' and explain the action and algorithm behind it.	Using logo. Identify problems and solve
Outcomes	Writing emails	Drawing of a network	Sort and filter data to plan a holiday	Make a book trailer	Programming a game	Create a picture using logo

Year 4					
Unit	**We are creators of online safety content**	**We are World Wide Web experts**	**We are website designers**	**We are weather investigators**	**We are program designers, debuggers and writers**
Overview	Learning to work collaboratively in a responsible way using tools including Google Docs and Sheets	We use the Internet every single day, but 30 years ago, it didn't exist. In this topic, pupils learn how data is transferred around the world using the world wide web.	Pupils design and create their own websites, considering content and style, as well as understanding the importance of working collaboratively. .	Children investigate the role of computers in forecasting and recording weather as well as how technology is used to present forecasts.	Through developing their understanding of the four pillars of computational thinking, children learn to identify them in different contexts
National Curriculum	Digital Literacy: Selecting, using and combining a variety of software to design and create a range of programs, systems and content that accomplish given goals. Understanding opportunities offered by the World Wide Web for communication and collaboration.	Digital Literacy: Understanding computer networks. Information Technology: Identify components of a network and understand how they used to connect to the Internet	Digital Literacy: Selecting, using and combining a variety of software to design and create a range of programs, systems and content that accomplish given goals. Understanding opportunities offered by the World Wide Web for communication and collaboration.	Digital Literacy: Understanding why some sources are more trustworthy than others. Computer science: Understanding the role of inputs and outputs in computerised devices	Computer science: Understand what decomposition is and how it facilitates problem solving. Designing, writing and debugging programs that accomplish specific goals Understand abstraction and patterns recognition.
Key skills	Learn about Google Docs. Learn about a slide presentation program and its features. Introduced to Google Forms. Create and share surveys and questionnaires. Explore spreadsheets and learn how to extract information from the data.	Create a presentation about the Internet's networks. Draw a map to show how we share information and images from a website. Learn about routers and how they work.	Introduction to Google Sites. Create a web page for a class website. Create a book review page. Plan and create their own website. .	Explore the weather and record data in a spreadsheet. Design a weather station. Design an automated machine. Learning how weather forecasts are made. Present a weather forecast video.	Learn about computational thinking. Predict what a piece of code might do. Explore abstraction and pattern recognition. Create a game in Scratch using algorithm design. Solve plugged and unplugged challenges, using computational thinking.
Outcomes	Create presentations, surveys and questionnaires	Create a presentation and map to present learning.	Create a website.	Making a weather forecast video	Create a game in Scratch

Year 5						
Unit	**We are online resource creators**	**We are micro:bit programmers**	**We are researchers**	**We are musicians**	**We are Mars Rover data experts**	**We are CAD designers**
Overview	Pupils create an online safety resource for younger children using tools such as presentation software, video tools or a simple stop-motion animation.	Programming a small device called a micro:bit to display animations or messages on its simple LED display using block coding	To enable children to quickly and accurately find information and become independent learners, they need to develop their searching skills and learn how to identify trustworthy sources.	Composing music using code through either Google, Music Lab, Sonic Pi, Garage Band, pupils can import samples, add drum beats and compose simple tunes culminating in a 'battle of the bands' using live loops of music.	Pupils explore inputs and outputs as well as Binary numbers to understand how the Mars Rover transmits and receives data and how scientists are able to control it to explore another planet!	Children learn how the Mars Rover is able to send images all the way back to Earth and experiment with online CAD software to design new tyres for it.
National Curriculum	Digital Literacy: Recognising that information on the Internet might not be true or correct. Using technology safely, by recognising acceptable/unacceptable behaviour and knowing what to do when they have concerns about content or contact online.	Computer science: Using block coding to program a device To explore variables and different forms of input. Information Technology: Understand how external devices can be programmed by a separate computer.	Digital Literacy: Recognising that information on the Internet might not be true or correct. Know how to use key words to quickly find accurate information	Digital Literacy: Selecting, using and combining a variety of software to design and create a range of programs, systems and content that accomplish given goals. Computer science: Using programming language to create music, including use of loops.	Digital Literacy: Understanding computer networks. Information Technology: Using search technologies effectively, appreciating how results are selected and ranked. Recognising that computers transfer data in binary and understand simple binary addition	Digital Literacy: Developing their CAD skills. Information Technology: Understanding how image data is transferred.
Key skills	Discuss online safety. Plan a storyboard about online safety using Stop Motion. Create an animation using Stop Motion. Edit animations, adding sound. Learn about pixels.	Investigate the BBC micro:bit device. Learn how an animation is created. Use the BBC micro:bit as a polling program. Turn the micro:bit into a pedometer. Use the BBC micro:bit as a scoreboard.	Learn how to check that information we find is accurate. Develop research skills. Create an informative poster using the software Canva. Learn how search engines work.	Explore digital music materials Create a piece of music using programming. Compose the soundtrack to a story. Learn about loops and how to create a repeating beat or rhythm.	Learn that information collected by Mars Rover has to travel as 'data' and is translated into binary code. Play a game that simulates programming a Mars Rover. Perform addition and subtraction binary calculations.	Learn about different image formats and how compression works. Learn about how the Mars rover follows instructions. Design a new tyre for the Mars rover using 3D software
Outcomes	Create a stop motion animation.	Create a scoreboard using the BBC micro:bit.	Create a poster using Canva.	Create music	Create messages using binary.	Design a 3D Mars Rover tyre using online software

Year 6					
Unit	**We are historians exploring the history of computers and secret codes**	**We are Python Programmers**	**We are barcodes experts**	**We are data processors**	**We are digital project creators**
Overview	Children learn about the history of Betchley Park, including: key historical figures The will leaning how the first modern computers were created as part of a WWII code breaking team and consider how computers have evolved over time. They then go on to investigate secret codes and how they are created, exploring 'brute force' hacking and learn how to make passwords more secure.	Building on their knowledge of coding from previous years, children are introduced to the text-based programming language Python, which is the language behind many apps and programs, such as Dropbox.	Children learn how data is collected and stored by exploring barcodes, QR codes and RFID chips, and investigate how collecting big data can be used to help people in a variety of different scenarios.	Children learn how to gather data and to use Excel and other application in order to organise and present data	Reflecting on and showcasing their computing skills, pupils create an entire project around a specific theme
National Curriculum	Digital Literacy: Understanding the importance of secure passwords and using searching and word processing skills to create a presentation. Editing sound recordings for specific purposes. Computer science: Using programming software to understand hacking, relating this to computer cracking codes in WWII. Information Technology: Learning about the history of computers and how they evolved over time.	Computer science: Understanding that websites can be altered by exploring the code beneath the site. Designing, writing and debugging programs that accomplish specific goals Solving problems by decomposing them into smaller parts.	Digital Literacy: Understanding how learning can be applied to a real world context. Selecting, using and combining a variety of software to design and create a range of programs, systems and content to collect, analyse, evaluate and present data. Information Technology: Understanding that computer networks provide multiple services Understanding how barcodes and QR codes work.	Digital Literacy: Selecting, using and combining a variety of software to design and create a range of programs, systems and content to collect, analyse, evaluate and present data.	Digital Literacy: Showcasing their digital literacy skills. Computer science: Demonstrating their computational thinking skills by designing and debugging programs, using different inputs and outputs. Information Technology: Understanding how search engines work and knowing how to use them safely and effectively.
Key skills	Explore a variety of codes. Learn what Brute Force hacking is. Find out about Betchley Park during WWII. Learn about important historical figures in the field of computing. Research and present information. Create and edit a radio play. Look at the evolution of computers. Research one historical computer and present information. Design a computer for the future.	Learn about Logo and create simple designs. Explore the use of loops within loops. Recreate a picture using Python. Use loops in Python to create art. Decompose a program and write an algorithm to create pieces of artwork.	Use an online QR generator to create a secret code. Learn about the different types of light signals. Children learn about the 'chip' and 'reader' technology (RFID). Think about how Big Data can be used to improve customer experience at a theme park. Analyse data and consider how they could turn an app into a successful App.	Create formulae. Use excel.	Use an electronic product to design and use code. Make their code more efficient. Use TinkerCAD to design the housing of their product. Create a website for their product. Create a video advert for their product.
Outcomes	Design a computer for the future.	Write an algorithm to create art.	Design an app.	Gather data and present relating to a sporting event eg World Cup, Olympics own event and organise budget	Plan, design and create a product.