Computing Curriculum Coverage: Key Stage One

Expected Vocabulary. NC Objectives. Intended activities. Prior knowledge – must be revisited before new content taught

Cross curricular(English)Cross curricular(Maths)Ten key skills

Year One	Curriculum Objective	Knowledge/Activity	Vocab
Autumn 1 – Improving mouse skills	Lesson 1: (Online Safety Unit L1) Using the internet safely LO: To recognise what the internet is and how to use it safely. NC Link: Recognise common uses of information technology beyond school. NC Link: 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. Lesson 2: Logging in. LO: To log in to a computer and access a website. Lesson 3: Click and drag skills. LO: To develop mouse skills. Lesson 4: Drawing shapes LO: To use mouse skills to draw and edit shapes.	Knowing how to log in and navigate around a computer, developing mouse skills, learning how to drag, drop, click and control a cursor to create works of art inspired by Kandinsky and self-portraits. Pupils who are secure will know how to: • Use computers more purposefully • Log in and navigate around a computer • Drag, drop, click and control a cursor using a mouse • Use software tools to create art on the computer Key Skills: • Learning how to explore and tinker with hardware to find out how it works. • Learning where keys are located on the keyboard. • Using a basic range of tools within graphic editing software. • Developing control of the mouse through dragging, clicking and resizing of images to create different effects. • Developing understanding of different software tools.	account, click, clipart, computer, drag, drag and drop, fill, duplicate, image, layers, left-click, log in, log off, mouse, password, predict, redo, resize, right-click, screen (monitor), software, tool, username, undo.

	Lesson 5: Drawing a story. LO: To draw a scene from a story using digital tools. Lesson 6: Self-portrait LO: To create a self-portrait using digital techniques. NC Link: Use technology purposefully to create, organise, store, manipulate and retrieve digital content. NC Link: Recognise common uses of information technology beyond school. NC Link: Use technology safely and respectfully, keeping personal information private.	• Recognising devices that are connected to the internet. • Logging in and out and saving work on their own account. Maths: Geometry – properties of shapes English: Reading- comprehension Key Skill – creativity – art work inspired by Kandinsky. 	
Autumn 2 – Algorithms Unplugged	Lesson 1: Online Emotions (Online Safety L2) LO: To identify how people's feelings and emotions can be affected by online content. NC Link: Recognise common uses of information technology beyond school. NC Link: 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.	Using an unplugged approach so that algorithms, decomposition and debugging are made relatable to familiar contexts, such as dressing up and making a sandwich, while learning why instructions need to be very specific. Pupils who are secure will be able to: • Explain what an algorithm is. • Write clear algorithms. • Follow an algorithm. • Explain what inputs and outputs are. • Create an achievable program. • Decompose a design into steps. • Identify bugs in an algorithm and how to fix them.	Algorithm, artificial intelligence, bug, chunks, code, computer, debug, decompose, device, directions, input, instructions, manageable, order, organise, output, program, problem, solution, specific, tasks, virtual assistant

	Lesson 2: What is an algorithm? LO: To understand what an algorithm is. Lesson 3: Algorithm Pictures LO: To follow instructions precisely to carry out an action. Lesson 4: Virtual assistants LO: To understand that computers and devices around us use inputs and outputs. Lesson 5: Step by Step LO: To understand and be able to explain what decomposition is. Lesson 6: Debugging directions. LO: To know how to debug an algorithm. NC Link: Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. NC Link: Create and debug simple programs. NC Link: Use logical reasoning to predict the behaviour of simple programs.	Key Skills: • Recognising that some devices are input devices and others are output devices. • Learning that decomposition means breaking a problem down into smaller parts. • Using decomposition to solve unplugged challenges. • Developing the skills associated with sequencing in unplugged activities. • Following a basic set of instructions. • Assembling instructions into a simple algorithm. • Learning to debug instructions when things go wrong. • Learning to debug an algorithm in an unplugged scenario. English: Writing – composition, Spoken language Maths: Geometry – properties of shapes, position and direction Literate – following instructions Literate	
Spring 1 – Rocket to the Moon	Lesson 1: Always be kind and considerate. (Online Safety L3) LO: To recognise how to treat others, both online and in person.	Developing keyboard and mouse skills through designing, building and testing individual rockets by creating a digital list of materials, using drawing software and recording data. Pupils who are secure will be able to:	Annotate, cells, components, create, data, debug, designing, digital content, digital image, document, e-

	NC Link: Recognise common uses of information technology beyond school. NC Link: 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. Lesson 2: Rocket materials To recognise that digital content can be represented in many forms. Lesson 3: Rocket design LO: To design a rocket using a graphics editing programme. Lesson 4: Rocket building instructions. LO: To sequence a set of instructions. Lesson 5: Making a rocket LO: To build a rocket. Lesson 6: Rocket launching LO: To test a design and record data. NC Link: Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	• Use a computer to make a list • Explain the benefits of making a list on the computer • Use a basic range of tools on graphics editing software to design a rocket • Sequence instructions • Follow instructions to build their model rocket • Input data about their rockets into a table or spreadsheet Key Skills: • Learning where keys are located on the keyboard. • Learning how to operate a camera to take photos and videos. • Using logical reasoning to predict the behaviour of simple programs. • Developing the skills associated with sequencing in unplugged activities. • Following a basic set of instructions. • Assembling instructions into a simple algorithm. • Learning to debug instructions when things go wrong. • Learning to debug an algorithm in an unplugged scenario. • Using a range of tools within graphic editing software. • Taking and editing photographs. • Developing control of the mouse through dragging, clicking and resizing of images to create different effects. • Developing understanding of different software tools. • Recognising devices that are connected to the internet.	document, edit, editing software, editing program, evaluate, folder, graphics, input, instructions, log in, photo, program, order, robot, save, sequence, share, software, spreadsheet, table.

		• Understanding that technology can be used to represent data in different ways: pictograms, tables, pie charts, bar charts, block graphs etc. • Logging in and out and saving work on their own computer. Cross-curricular links: • Maths: Measurement, Statistics • English: Writing – composition, Reading – comprehension • History • Science: Everyday materials Key Skill - Numerate. Application of maths skills to create data representations. Numerate	
Spring 2 – Programming Bee-bots	Lesson 1: Posting and sharing online. (Online Safety L4) LO: To recognise the importance of being careful when posting and sharing online. NC Link: Recognise common uses of information technology beyond school. NC Link: 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.	Developing early programming skills using either the Bee:Bot or virtual Bee:Bot. Pupils who are secure will be able to: • Recognise cause and effect when pressing buttons on a Bee-Bot. • Discuss and demonstrate how the Bee-Bot works. • Record video, ensuring everyone is in the shot. • Give several clear instructions in sequence. • Program a Bee-Bot to reach a destination. • Identify and correct mistakes in their programming. Key skills: • Learning how to explore and tinker with hardware to find out how it works.	Algorithm, bee-bot, code, debug, demonstration, explain, explore, filming, inputting, instructions, precise, predict, program, review, test, tinker, video

	Lesson 2: Getting to know a Bee-Bot LO: To explore a new device. Lesson 3: Making a Bee-Bot video LO: To create a demonstration video. Lesson 4: Precise instructions LO: To plan and follow a precise set of instructions. Lesson 5: Bee-Bot world LO: To program a device. Lesson 6: Three Little Pigs LO: To create a program that tells a story. NC Link: Create and debug simple programs. NC Link: Use logical reasoning to predict the behaviour of simple programs.	• Learning how to operate a camera to take photos and videos. • Using decomposition to solve unplugged challenges. • Using logical reasoning to predict the behaviour of simple programs. • Developing the skills associated with sequencing in unplugged activities. • Following a basic set of instructions. • Assembling instructions into a simple algorithm. • Programming a floor robot to follow a planned route. • Learning to debug instructions when things go wrong. • Using programming language to explain how a floor robot works. • Learning to debug an algorithm in an unplugged scenario. • Taking and editing photographs. Cross-curricular links: Maths: Geometry – position and direction Geography: Geographical skills and fieldwork English: Reading – comprehension, Spoken language Key Skill – creative. Taking photographs and editing them. 	
Summer 1 – Digital Imagery	Lesson 1: How much time should we spend on technology? LO: To discuss ways to balance time spent online and offline. NC Link: Recognise common uses of information technology beyond school.	Using creativity and imagination to plan a miniature adventure story and capturing it using developing photography skills. Children learn to enhance photos using a range of editing tools as well as searching for and adding other images to a project, resulting in a high-quality photo collage showcase.	Background, blurred, camera, clear, crop, delete, device, digital camera, download, drag and drop, edit, editing software, filter,

	NC Link: 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. Lesson 2: Planning a photo story LO: To understand and create a sequence of pictures. Lesson 3: Taking photos LO: To take clear photos. Lesson 4: Editing photos LO: To edit photos. Lesson 5: Searching for images LO: To search for and import images. Lesson 6: Photo collage LO: To create a photo collage. NC Link: use logical reasoning to predict the behaviour of simple programs. NC Link: Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	Pupils who are secure will be able to: • Plan a pictorial story using photographic images in sequence. • Explain how to take clear photos. • Take photos using a device. • Edit photos by cropping, filtering and resizing. • Search for and import images from the internet. • Explain what to do if something makes them uncomfortable online. • Organise images on the page, orientating where necessary. Key Skills: • Learning how to explore and tinker with hardware to find out how it works. • Learning where keys are located on the keyboard. • Learning how to operate a camera to take photos and videos. • Developing the skills associated with sequencing in unplugged activities. • Using a basic range of tools within graphic editing software. • Taking and editing photographs. • Developing control of the mouse through dragging, clicking and resizing of images to create different effects. • Developing understanding of different software tools. • Searching and downloading images from the internet safely. • When using the internet to search for images, learning what to do if they come across something online that worries them or makes them feel uncomfortable.	image, import, internet, keyword, online, photograph, resize, save as, screen, search engine, sequence, software, storage space, visual effects

		Cross-curricular links: English: Reading – comprehension RSE: Online safety Art and design Key Skill – self-aware. Recognising uncomfortable feelings and acting on them. 	
Summer 2 – Introduction to Data	Lesson 1: Zoo data LO: to represent data in different ways, Lesson 2: Picture data LO: To use technology to represent data. Lesson 3: Minibeast hunt LO: To collect and record data. Lesson 4: Animal branching databases LO: To sort data. Lesson 5: Inventions LO: To design an invention to gather data NC Link: Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	Learning what data is and the different ways that it can be represented as well as developing an understanding of why data is useful, how it can be used and ways in which it can be gathered and recorded both by humans and computers. Pupils who are secure will be able to: • Represent animal-themed data in different ways, using objects and technology. • Log in and use mouse and keyboard skills to navigate the computer. • Represent the same data as a pictogram and a table or chart. • Collect data about minibeasts using a tally chart and represent their data digitally. • Click and drag objects to sort data using a branching database. • Consider the types of input that would be used to gather different forms of data when designing an invention. Key Skills: • Learning how to explore and tinker with hardware to find out how it works.	Bar chart, block graph, branching database, categorise, chart, click and drag, compare, count, data, data collection, data record, data representation, edit, input, keyboard, line graph, mouse, information, label, pictogram, pie chart, process, record, resize, sort, table, tally, values

		• Recognising that some devices are input devices and others are output devices. • Learning where keys are located on the keyboard. • Developing control of the mouse through dragging, clicking and resizing of images to create different effects. • Developing understanding of different software tools. • Recognising devices that are connected to the internet. • Understanding that technology can be used to represent data in different ways: pictograms, tables, pie charts, bar charts, block graphs etc. • Using data representations to answer questions about data. • Using software to explore and create pictograms and branching databases. Cross-curricular links: Maths: Number – number and place value, Statistics Key Skill – Numerate. Applying maths skills to create pictograms and databases. Numerate	
Year Two			
Autumn 1 – What is a computer?	Lesson 1: What happens when I post online? (Online safety L1) LO: To decide which information is safe to share online. NC Link: Use technology safely, respectfully and responsibly.	Exploring what a computer is by identifying and learning how inputs and outputs work. Understanding how computers are used in the wider world, children design their own computerised invention. Pupils who are secure will be able to:	Battery, buttons, camera, computer, desktop, device, digital content, digital recorder, electricity, input, invention, keyboard, laptop, monitor, mouse, output,

	NC Link: Recognise acceptable/unacceptable behaviour. NC Link: Identify a range of ways to report concerns about content and contact. Lesson 2: Computer parts LO: To recognise the parts of a computer Lesson 3: Inputs LO: To recognise how technology is controlled. Lesson 4: Technology safari LO: To recognise technology. Lesson 5: Invention LO: To create a design for an invention. Lesson 6: Real-world role play LO: To understand the role of computers. NC Link: Use logical reasoning to predict the behaviour of simple programs. NC Link: Recognise common uses of information technology beyond school.	• Name some computer peripherals and their function. • Recognise that buttons cause effects. • Explain that technology follows instructions. • Recognise different forms of technology. • Design an invention which includes inputs and outputs. • Explain the role of computers in the world around them. Key Skills: • Understanding what a computer is and that it's made up of different components. • Recognising that buttons cause effects and that technology follows instructions. • Learning how we know that technology is doing what we want it to do via its output. • Using greater control when taking photos with cameras, tablets or computers. • Developing word processing skills, including altering text, copying and pasting and using keyboard shortcuts. • Using word processing software to type and reformat text. • Creating and labelling images. • Learning how computers are used in the wider world. Cross-curricular links: English: Spoken Language Science: Working scientifically Design and technology: Design Key Skill – ask questions about how computers are used in the wider world. Curious	photograph, robot, scanner, screen, system, tablet, technology, till, video, wire.
Autumn 2 – Algorithms and Debugging	Lesson 1: How do I keep my things safe online? (Online Safety L2)	Developing an understanding of what algorithms are, how to program them and how they can be developed to be	Abstraction, algorithm, artificial intelligence, bug, clear, correct,

	LO: To practise keeping information safe and private online. NC Link: Use technology safely, respectfully and responsibly. NC Link: Recognise acceptable/unacceptable behaviour. NC Link: Identify a range of ways to report concerns about content and contact. Lesson 2: Dinosaur algorithm LO: To decompose a game to predict the algorithms that are used. Lesson 3: Machine learning LO: To understand that computers can use algorithms to make predictions (machine learning). Lesson 4: Through the maze LO: To plan algorithms that will solve problems. Lesson 5: Making maps LO: To understand what abstraction is. Lesson 6: Unplugged debugging LO: To understand what debugging is. NC Link: Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions NC Link: Create and debug simple programs.	more efficient through a range of unplugged and plugged-in activities. Pupils who are secure will be able to: • Decompose a game to predict the algorithms. • Give a definition for 'decomposition'. • Write clear and precise algorithms. • Create algorithms to solve problems. • Use loops in their algorithms to make their code more efficient. • Explain what abstraction is. Key Skills: • Developing confidence with the keyboard and the basics of touch -typing. • Articulating what decomposition is. • Decomposing a game to predict the algorithms used to create it. • Learning that there are different levels of abstraction. • Explaining what an algorithm is. • Following an algorithm. • Creating a clear and precise algorithm. • Learning that programs execute by following precise instructions. Yr 1 – Autumn 2 Algorithms Unplugged Cross-curricular links: English: Spoken language, Writing – composition Maths: Geometry – position and direction Geography: Geographical skills and fieldwork Key Skill – literate. Clear instruction writing to communicate instructions. 	data, debug, decompose, error, key features, loop, predict, unnecessary

	NC Link: Use logical reasoning to predict the behaviour of simple programs.		
Spring 1 – Word Processing	Lesson 1: It's my choice (Online Safety L3) LO: To recognise when to deny permission online? NC Link: Use technology safely, respectfully and responsibly. NC Link: Recognise acceptable/unacceptable behaviour. NC Link: Identify a range of ways to report concerns about content and contact. Lesson 2: Getting to know the keyboard LO: To begin to learn to touch type. Lesson 3: Getting started with word processing. LO: To understand how to use a word processor. Lesson 4: Newspaper writer LO: To understand how to add images to a text document. Lesson 5: Poetry book LO: To create a poetry book using sources from the internet. Lesson 6: Digital writer LO: To create a digital piece of writing. NC Link: Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	Learning about word processing and how to stay safe online as well developing touch-typing skills. Introducing important keyboard shortcuts, as well as simple editing tools within a word processor including: bold, italics, underline and font colour as well as how to import images. Pupils who are secure will be able to: • Explain which are the home row keys and how to find them for typing. • Use the spacebar and backspace correctly. • Type and make simple alterations to text using buttons on a word processor. • Search for, import and alter appropriate images for a text document. • Modify text in a document. • Use copy and paste to copy text from one document to another. • Explain what information is safe to be shared online. Key Skills: • Developing confidence with the keyboard and the basics of touch typing. • Developing word processing skills, including altering text, copying and pasting and using keyboard shortcuts. • Using word processing software to type and reformat text. • Searching for appropriate images to use in a document. • Understanding what online information is. • Identifying whether information is safe or unsafe to be shared online. Cross-curricular links: English: Writing – transcription; Writing - vocabulary, punctuation and grammar; Reading - comprehension	Back button, backspace, bold, copy, copyright, cut, delete, forward button, highlight, image, import, italic, keyboard, keyboard shortcut, layout, navigate, paste, redo, search, space bar, text, text effects, touch typing, underline, undo, word processing

	NC Link: Use technology safely and respectfully, keeping personal information private.		
Spring 2 – Programming: Scratch Jr	Lesson 1: Is it true? (Online safety L4) LO: To recognise that not everything online is true. NC Link: Use technology safely, respectfully and responsibly. NC Link: Recognise acceptable/unacceptable behaviour. NC Link: Identify a range of ways to report concerns about content and contact. Lesson 2: Using ScratchJr LO: To explore a new application Lesson 3: Creating an animation LO: To create an animation Lesson 4: Making a musical instrument LO: To use characters as buttons. Lesson 5: Programming a joke LO: To follow an algorithm. Lesson 6: 'The Three Little Pigs' algorithms LO: To plan and use code to create an algorithm. NC Link: Use logical reasoning to predict the behaviour of simple programs. NC Link: Create and debug simple programs.	Exploring what 'blocks' do, using the app 'ScratchJr,' by carrying out an informative cycle of predict > test > review. Programming a familiar story and an animation of an animal, children make their own musical instrument by creating buttons and recording sounds as well as following an algorithm to record a joke. Pupils who are secure will be able to: • Explore a new application independently. • Explain what the blocks on ScratchJr do and use them for a purpose. • Recognise a loop in coding and why it is useful. • Use a code to create an animation of an animal moving. • Use code to follow *and* create an algorithm. • Program code to run 'on tap'. • Explain the role of the blocks in a program they have created. Key skills: • Recognising that buttons cause effects and that technology follows instruction. • Explaining what an algorithm is. • Following an algorithm. • Creating a clear and precise algorithm. • Learning that programs execute by following precise instructions. • Incorporating loops within algorithms. • Using logical thinking to explore software, predicting, testing and explaining what it does. • Using an algorithm to write a basic computer program. • Using loop blocks when programming to repeat an instruction more than once.	Algorithm, animation, blocks, bug, button, CGI, computer code, code, debug, fluid, icon, imitate, instructions, loop, 'on tap', programming, repeat, ScratchJR, sequence, sound recording.

		• Using software (and unplugged means) to create story animations. Cross-curricular links: English: Spoken language, Reading – comprehension Maths: Geometry – position and direction Music Key Skill – Literate. Developing awareness of newspaper writing and poetry. Literate	
Summer 1 – Stop Motion	Lesson 1: What is animation? LO: To understand what animation is. Lesson 2: My first animation LO: To create a stop motion animation. Lesson 3: Planning my project LO: To plan my stop motion animation. Lesson 4: Creating my project LO: To create a stop motion animation. Lesson 5: Creating my project LO: To create a stop motion animation. NC Link: Use technology purposefully to create, organise, store, manipulate and retrieve digital content. NC Link: Use technology safely and respectfully, keeping personal information private.	Storyboarding and simple animation creation using tablet devices. Pupils who are secure will be able to: • Create a flip book animation. • Decompose a story into smaller parts to plan a stop motion animation. • Create stop motion animations with small changes between images. Key Skills: • Using greater control when taking photos with cameras, tablets or computers. • Using logical thinking to explore software, predicting, testing and explaining what it does.	Animation, background, decompose, digital device, drawing, flipbook, frames, moving images, object, onion skinning, plan, still images.
Summer 2 - International Space Station	Lesson 1: Homes in space LO: To understand how computers can help humans survive in space. Lesson 2: Space bag	Learning how astronauts survive on the ISS, including identifying necessary items, designing sensor displays, and exploring habitable planets. Children gain an understanding of living in space and how space exploration can benefit life on Earth.	Algorithm, astronaut, data, digital, digital content, experiment, galaxy, insulation, interactive map,

	LO: To create a digital drawing of essential items for life in space. Lesson 3: Warmer, colder LO: To understand the role of sensors on the ISS. Lesson 4: Experiments in space LO: To create an algorithm for growing a plant in space. Lesson 5: Goldilocks planets LO: To interpret data. NC Link: Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	Pupils who are secure will be able to: • Describe and explain how astronauts' survival needs are met aboard the ISS. • Identify and digitally draw items which fulfil basic human needs when aboard the ISS. • Read the correct temperature on a thermometer. • Design a display showing everything that needs to be monitored by sensors on the ISS. • Create an algorithm that addresses all plants' needs. • Explain how space exploration can benefit life on Earth. • Read data to identify whether a planet might be habitable. Key Skills: • Developing confidence with the keyboard and the basics of touch-typing. • Creating and labelling images. • Collecting and inputting data into a spreadsheet. • Interpreting data from a spreadsheet. • Learning how computers are used in the wider world. Cross-curricular links: Science: Animals, including humans; Living things and their habitats Maths: Measurement Key Skill – curious. Asking questions about how computers are used in the wider world. 	International Space Centre, International Space Station, Interpret, laboratory, monitor, planet, satellite, sensor, space, temperature, thermometer, water reservoir.

Computing Curriculum Coverage: Key Stage Two

Expected Vocabulary. NC Objectives. Intended activities. Prior knowledge – must be revisited before new content taught

Cross curricular(English)Cross curricular(Maths)Ten key skills

Year Three	Curriculum Objective	Knowledge/Activity	Vocab
Autumn 1 - Networks	Lesson 1: Beliefs, opinions and facts on the internet. (Online safety L1) LO: To understand how the internet can be used to share beliefs, opinions and facts. NC Link: Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. NC Link: Select, use and combine a variety of software (including internet services) on a range of digital deviced to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. NC Link: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Lesson 2: What is a network? LO: To recognise what a network is.	Introduction to the concept of networks, learning how devices communicate. From identifying components, learn how information is shared and deepen this understanding by exploring examples of real-world networks Pupils who are secure will be able to: • Recognise that a network is two or more devices connected and its purpose. • Identify key components that make up the school's network. • Explain the difference between wired and wireless connections. • Recognise that files are saved on a server. • Understand the role of the server in a network when requesting a website. • Identify parts of a website's journey to reach your computer. • Recognise that routers connect to send information. • Understand that data is broken into packets. Key Skills: • Learning about the purpose of routers. • Understanding the role of the key components of a network. • Understanding that websites and videos are files that are shared from one computer to another. • Learning about the role of packets.	Device, file, internet, network, network switch, packet data, router, server, the cloud, user, WiFi, wired, wireless, wireless access point.

	Lesson 3: A file's journey LO: To demonstrate how information moves around a network. Lesson 4: How a website works. LO: To demonstrate how a website works. Lesson 5: Routers LO: To explore the role of a router. Lesson 6: What is packet data? LO: To identify the role of packet data. NC Link: 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. NC Link: 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.	• Understanding how networks work and their purpose. • Identifying the key components within a network, including whether they are wired of wireless. • Recognising links between networks and the intert. • Learning how data is transferred. Cross-curricular links: English: Spoken language Y2, A1 – What is a computer?	
Autumn 2 – Programming: Scratch	Lesson 1: Who should I ask? (Online Safety L2) LO: To explain what should be done before sharing information online. NC Link: Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. NC Link: Select, use and combine a variety of software (including	Building on the use of the 'ScratchJr' application in Year 2, progressing to using the more advanced application called 'Scratch', learning to use repetition or 'loops' and building upon skills to program an animation, a story and a game. Pupils who are secure will be able to: • Explain what some of the blocks do in Scratch. • Explain what a loop is and include one in their program.	Algorithm, animation, application, code, code block, debug, decompose, game, interface, loop, predict, program, remixing code, repetition code, review, Scratch, sprite, tinker.

	internet services) on a range of digital deviced to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. NC Link: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Lesson 2: Tinkering with Scratch LO: To explore a programming application Lesson 3: Using loops LO: To use repetition (a loop) in a program. Lesson 4: Making an animation LO: To program an animation. Lesson 5: Storytelling LO: To program a story. Lesson 6: Programming a game LO: To program a game. NC Link: Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. NC Link: Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.	• Suggest possible additions to an existing program by remixing code. • Recognise where something on screen is controlled by code. • Use a systematic approach to find bugs. • Understand the definitions of decomposition and algorithm and how they are used to create accurate code. Key skills: • Using decomposition to explore the code behind an animation. • Using repetition in programs. • Using logical reasoning to explain how simple algorithms work. • Explaining the purpose of an algorithm. • Forming algorithms independently. • Using logical thinking to explore more complex software; predicting, testing and explaining what it does. • Incorporating loops to make code more efficient. • Continuing existing code. • Making reasonable suggestions for how to debug their own and others' code. Cross-curricular links: English: Spoken language, Writing – composition Music Key Skill – numerate. Working logically to explain algorithms. Numerate	

	NC Link: Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.		
Spring 1 – Emailing	Lesson 1: When being online makes me upset. (Online safety L3) LO: To identify the effects that the internet can have on people's feelings. NC Link: Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. NC Link: Select, use and combine a variety of software (including internet services) on a range of digital deviced to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. NC Link: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Lesson 2: Communicating with technology LO: To understand how we communicate with technology. Lesson 3: Sending an email LO: To understand what emails are and how to send one. Lesson 4: Adding attachments.	Learning how to send and edit emails, add attachments and how to be a responsible digital citizen by thinking about the contents of what is sent. Pupils who are secure will be able to: • Log in and out of email. • Send a simple email with a subject plus 'To' and 'From' in the body of the text. • Edit an email. • Type in the email address correctly and send the email. • Add an attachment to an email. • Write an email using positive language, with an awareness of how it will make the recipient feel. • Recognise unkind behaviour online and know how to report it. • Offer advice to victims of cyberbullying. • Recognise when an email may be fake and explain how they know. Key Skills: • Learning to log in and out of an email account. • Writing an email including a subject, 'to' and 'from'. • Sending an email with an attachment. • Replying to an email. • Understanding the purpose of emails. • Learning about cyberbullying. • Learning that not all emails are genuine, recognising when an email might be fake and what to do about it. Cross-curricular links: English: Writing – composition RSE: Online relationships	Attachment, Bcc (Bling carbon copy), Cc (Carbon copy), compose, content, cyberbullying, document, domain, download, email, email account, email address, emoji, emotions, fake, font, genuine, hacker, icons, inboc, information, link, log in, log out, negative language, password, personal information, positive language, reply, responsible digital citizen, scammer, settings, send, sign in, spam email, subject bar, theme, tone, username, virus, WiFi.

	LO: To know how to create an email with an attachment. Lesson 5: Be kind online LO: To understand the importance of being kind online. Lesson 6: To recognise when an email is not genuine. NC Link: Understand computer networks, including the internt; how they can provide multiple services, such as the World Wide Wb, and the opportunities they offer for communication and collaboration. NC Link: Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. NC Link: Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create…content that accomplishes given goals. NC Link: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Y2, Sp1 – Word Processing Key Skill – independent and self-aware. What to do when an email may be fake. 	
Spring 2 – Journey inside a computer	Lesson 1: Sharing of information (Online safety L4) LO: To understand the ways personal information can be shared on the internet. NC Link: Use search technologies effectively, appreciate how results are selected and ranked, and be	Assuming the role of computer parts and creating paper versions of computers helps to consolidate an understanding of how a computer works, as well as identifying similarities and differences between various models. Pupils who are secure will be able to:	Algorithm, assemble, CPU (central processing unit), data, decompose, desktop, disassemble, GPE (graphics processing unit), hard drive, HDD (hard disk drive), infinite loop, input, keyboard,

	discerning in evaluating digital content. NC Link: 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. NC Link: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Lesson 2: Inputs and outputs LO: To recognise basic inputs and outputs. Lesson 3: Building a paper laptop. LO: To identify the components inside a laptop. Lesson 4: Following instructions. LO: To understand the purpose of computer parts. Lesson 5: Computer memory. LO: To understand the purpose of computer parts. Lesson 6: Dismantling a tablet LO: To decompose a tablet computer. NC Link: Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve	• Recognise inputs and outputs and that the computer sends and receives information. • Explain that the parts of a laptop work together and the purpose of each part. • Explain what an algorithm is. • Suggest what memory is for inside a computer. • Make comparisons between different types of computer. Key Skills: • Understanding what the different components of a computer do and how they work together. • Drawing comparisons across different types of computers. • Using decomposition to explain the parts of a laptop computer. • Explaining the purpose of an algorithm. Cross-curricular links: English: Spoken language Design and technology Key Skill – creative. Building a paper laptop. 	laptop, memory, microphone, monitor, mouse, output, photocopier, program, QR code, RAM (random access memory), ROM (read only memory), storage, tablet device, technology, touchscreen, touchpad.

	problems by decomposing them into smaller parts. NC Link: Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. NC Link: Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.		
Summer 1 - Video Trailers	Lesson 1: Rules of social media platforms (Online safety L5) LO: To understand the rules for social media platforms. NC Link: Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. NC Link: 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. NC Link: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Lesson 2: Planning a book trailer. LO: To plan a book trailer. Lesson 3: Filming	Developing filming and editing video skills through the storyboarding and creation of book trailers. Pupils who are secure will be able to: • Describe the purpose of a trailer. • Create a storyboard for a book trailer. • Consider camera angles when taking photos or videos. • Import videos and photos into film editing software. • Record sounds and add these to a video. • Add text to a video. • Incorporate transitions between images. • Evaluate their own and others' trailers. Key Skills: • Using logical thinking to explore more complex software; predicting, testing and explaining what it does. • Taking photographs and recording video to tell a story. • Using software to edit and enhance their video adding music, sounds and text on screen with transitions. Cross-curricular links: English: Reading – comprehension, Writing - composition Y1, Sp2 – Digital imagery Y2, Sp2 – Stop Motion	Application, camera angle, clip, cross blur, cross fade, cross zoom, desktop, digital device, dip to black, directional wipe, edit, film, film editing software, graphics, import, key events, laptop, music, photo, plan, recording, sound effects, storyboard, time code, trailer, transition, video, voiceover.

	LO: To take photos or videos that tell a story. Lesson 4: Editing the trailer. LO: To edit a video. Lesson 5: Transitions and text. LO: To add text and transitions to a video. Lesson 6: Video review. LO: To evaluate video editing. NC Link: 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. NC Link: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. NC Link: Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.	Key skill – Literate. Storytelling. Literate	
Summer 2 – Comparison Cards Database	Lesson 1: Records, fields and data. LO: To understand the terminology around databases. Lesson 2: Race against the computer. LO: To compare paper and computerised databases.	Using the theme of a 'Comparison card game' to understand what a database is. Learning the meanings of records, fields and data. Further exploration will lead to the development of the ideas of sorting and filtering. Pupils who are secure will be able to: • Explain what is meant by 'field,' 'record,' and 'data.' • Compare paper and computerised databases.	Categorise, category, chart, data, database, excel, fields, filter, graph, information, interpret, PDF, questionnaire, record, representation, sort, spreadsheets.

	Lesson 3: Sorting and filtering. LO: To sort, filter and interpret data. Lesson 4: Representing data. LO: To represent data in different ways. Lesson 5: Planning a holiday. LO: To sort data for a purpose. NC Link: 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.	• Put values into a spreadsheet. • Sort, filter and interpret data in a spreadsheet. • Create a graph on Microsoft Excel. • Explain the purpose of visual representations of data. Key Skills: • Using logical thinking to explore more complex software; predicting, testing and explaining what it does. • Understanding the vocabulary associated with databases: field, record, data. • Learning about the pros and cons of digital versus paper databases. • Sorting and filtering databases to easily retrieve information. • Creating and interpreting charts and graphs to understand data. Cross-curricular links: Maths: number and place value, statistics Y1, Su2 – Introduction to Data Y2, Su2 – International Space Station	
Year Four			
Autumn 1 – Collaborative Learning	Lesson 1: What happens when I search online? (Online safety L1) LO: To describe how to search for information within a wide group of technologies and make a judgement about the probably accuracy. NC Link: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Working collaboratively in a responsible and considerate way as well as looking at a range of collaborative tools. Pupils who are secure will be able to: • Understand the need to be thoughtful when working on a collaborative document. • Use comments to suggest changes to a document and understand how to resolve comments. • Use a variety of different slide styles to covey information including images and transitions. • Create a Google Form with a range of different questions types that will provide different types of answers, e.g. text, multiple choice of numerical values.	Animations, average, bar chart, collaboration, comment, contribution, data, edited, email account, format, freeze, icon, images, insert, link, multiple choice, numerical data, pie chart, presentations, resolved, reviewing comments, share, slides, software, spreadsheets, suggestions, survey,

	Lesson 2: Teamwork LO: To understand that software can be used to work online collaboratively. Lesson 3: Sharing a document LO: To understand how to contribute to someone else's work effectively. Lesson 4: Slide presentations. LO: To understand how to create effective presentations. Lesson 5: Google Forms LO: To understand how to create and share Google Forms. Lesson 6: Shared spreadsheets. LO: To understand how to use a shared spreadsheet to explore data. NC Link: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. NC Link: 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. NC Link: 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.	• Export data to a spreadsheet, highlighting data, using conditional formatting and calculating averages and sums of numbers. Key skills: • Understanding that computer networks provide multiple services, such as the World Wide Web, and opportunities for communication and collaboration. • Use online software for documents, presentations, forms and spreadsheets. • Using software to work collaboratively with others. • Understanding that software can be used collaboratively online to work as a team. • Recognising what appropriate behaviour is when collaborating with others online. Cross-curricular links: RSE: Respectful Relationships, courtesy and manners. English: Writing – composition and peer assessment. Maths: Interpreting data, bar charts and time graphs. Key skill – communicator. Sharing using PowerPoint. 	teamwork, themes, transitions

Autumn 2 – Further coding with Scratch	Lesson 1: How do companies encourage us to buy online? (Online safety L2) LO: To descrive some of the methods used to encourage people to buy things online. NC Link: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Lesson 2: Scratch reminder LO: To recall the key features of Scratch. Lesson 3: Identifying what code does. LO: To understand how a Scratch game works by using decomposition to identify key features. Lesson 4: Introduction to variables LO: To recognise what a variable is. Lesson 5: Making a variable LO: To understand how to make a variable in Scratch. Lesson 6: Times tables project. Creative LO: To create a quiz using variables. NC Link: Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	Learning the basics of programming in Scratch, children will create a simple script, use decomposition and understand what variables are. Pupils who are secure will be able to: • Understand how to create a simple script in Scratch. • Add or change a sprite and prevent it from rotating. • Use decomposition to identify key features and understand how to decipher actions that make the quiz game work. • Understand what a variable is and how to use the 'say' and 'ask' blocks. • Create a variable and be able to use a variable to record a score. • Understand what a variable is and how it works within a program. Key skills: • Using decomposition to solve a problem by finding out what code was used. • Using decomposition to understand the purpose of a script of code. • Creating algorithms for a specific purpose. • Coding a simple game • Incorporating variables to make code more efficient. • Remixing existing code. Cross-curricular links: Maths: 2-D grids, coordinates and translations. Multiplication and division facts for the 3-, 4- and 8-times tables. English: Spoken language – speculating, hypothesising, imagining and exploring ideas. Y3 A2 – Programming: Scratch	Code block, conditional statement, coordinates, decompose, feature, information, negative number, orientation, position, program, project, script, sprite, stage, tinker, variable.

	NC Link: Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. NC Link: Use sequence, selection and repetition in programs; work with variables and various forms of input and output.		
Spring 1 – Website design	Lesson 1: Fact, opinion or belief? (Online safety L3) LO: To explain why lots of people sharing the same opinions or beliefs online do not make those opinions or beliefs true. NC Link: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Lesson 2: Getting to know Microsoft Sway. LO: To explore the features of Microsoft Sway. Lesson 3: Book review webpage. LO: To plan content for a collaborative webpage. Lesson 4: Adding features. LO: To create an engaging webpage. Lesson 5: Planning my website. LO: To plan and create a website. Lesson 6: Creating my website LO: To create and evaluate a website.	Developing their research, word processing, and collaborative working skills whilst learning how web pages and web sites are created, exploring how to change layouts, embed images and videos and link between pages. Pupils who are secure will be able to: • Create a Sway with a title, image and a completed first header section. • Create a clear plan for their web page and beginning to create it. • Create a professional-looking web page with useful information and a clear style, which is easy for the user to read and find information from. • Create a clear plan by referring back to their checklist to include a range of features. • Create a web page with clear sections and with a range of features in. Key skills: • Building a web page and creating content for it. • Designing and creating a webpage for a given purpose. • Using software to work collaboratively with others. Cross-curricular links: RSE: Online Relationships – keeping safe, recognise risks and how to report. How information and data is shared and used online. English: Reading – comprehension. Discussions about books – taking turns and listening to what others say.	Assessment, audience, checklist, collaboration, content, contribution, create, design, embed, evaluate, features, google sites, hobby, homepage, hyperlinks, images, insert, online, plan, progress, published, record, review, style, subpage, tab, theme, web page, website, world wide web.

	NC Link: 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. NC Link: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	English: Writing – composition. Organisational devices, learning from writing examples and peer assessment. Key Skill – communicator. Using SWAY to share information.  Y2, Sp1 – Word processing	
Spring 2 - HTML	Lesson 1: What is a bot? (Online safety L4) LO: To explain that technology can be designed to act like or impersonate living things. NC Link: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Lesson 2: What is HTML? LO: To recognise the role of HTML in a web page. Lesson 3: Remixing HTML. LO: To change HTML code for a specific purpose. Lesson 4: HTML unplugged. LO: To recognise the basics of HTML. Lesson 5: Website hacking LO: To alter the HTML on a live webpage. Lesson 6: Replacing images.	Editing the HTML of a web page to change the layout of a website and the text and images. Pupils who are secure will be able to: • Recognise the role of HTML in a web page. • Add text between the heading and paragraph tags. • Explore a web page using the inspect tool. • Explain how they altered the HTML to create their posters. • Alter the basic elements within a web page using the inspect tool. • Replace the text and images in a webpage. Key Skills: • Exploring the HTML on a web page. • Remixing existing code. • Translating HTML into text and images. • Identifying HTML tags. • Altering HTML on a live web page. • Replacing images on a web page. • Recognising that information on the internet might not be true or correct and that some sources are more trustworthy than others. Cross-curricular links:	Code, content, copyright, CSS, end tag, fake news, hacker, heading, HTML, HTML tags, internet browser, paragraph, remixing, start tag, text, unplugged, URL, web page, web page elements.

	LO: To alter an image on a web page. NC Link: Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	RSE: Online Relationships – online friendships and the risks associated with strangers. English: Writing – Composition. Learning structure, vocabulary and grammar from similar examples. Using simple organisational devices.	
Summer 1 - Computational thinking	Lesson 1: What is my #TechTimetable like? (Online safety L5) LO: To explain how technology can be a distraction and identify when I might need to limit the amount of time spent using technology. NC Link: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Lesson 2: What is computational thinking? LO: To understand that computational thinking is made up of four key strands. Lesson 3: Decomposition LO: To understand what decomposition is and how to apply it to solve problems. Lesson 4: Abstraction and pattern recognition. LO: To understand what pattern recognition and abstraction mean. Lesson 5: Algorithm design.	Developing the four areas of computational thinking through a range of plugged and unplugged activities. Pupils who are secure will be able to: • Understand that problems can be solved more easily using computational thinking. • Understand what the different code blocks do and create a simple game. • Understand the terms 'pattern recognition' and 'abstraction' and how they help to solve a problem. • Create a Scratch program which draws a square and at least one other shape. • Understand how computational thinking can help to solve problems and apply computational thinking to problems they face. Key Skills: • Using decomposition to solve a problem by finding out what code was used. • Using decomposition to understand the purpose of a script of code. • Identifying patterns through unplugged activities. • Using past experiences to help solve new problems. • Using abstraction to identify the important parts when completing both plugged and unplugged activities. • Creating algorithms for a specific purpose. • Using abstraction and pattern recognition to modify code. Cross-curricular links:	Abstraction, algorithm, code, computational thinking, decomposition, input, logical reasoning, output, pattern recognition, script, sequence, variable.

	LO: To understand how to create an algorithm and what it can be used for. Lesson 6: Applying computational thinking LO: To combine computational thinking skills to solve a problem. NC Link: Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. NC Link: Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.	Maths: solve problems involving multiplying and adding. 2-D shapes and 3-D shapes. Recognising angles. Physical Education: perform dances using a range of movement patterns. English: Spoken Language – develop understanding through speculating, hypothesising, imagining and exploring ideas. Key Skill – Numerate. Applying knowledge of pattern to create algorithm. Numerate	
Summer 2 – Investigating weather	Lesson 1: What's the weather like? LO: To log data taken from online sources in a spreadsheet. Lesson 2: Weather stations LO: To design a weather station. Lesson 3: Extreme weather. LO: To design an automated machine to respond to sensor data. Lesson 4: Satellites and forecasts. LO: To understand how weather forecasts are made. Lesson 5: Presenting forecasts. LO: To use tablets or digital camera to present a weather forecast. NC Link: 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	Researching and storing data using spreadsheets, designing a weather station which gathers and records data and learning how weather forecasts are made. Children use tablets or digital cameras to present a weather forecast. Pupils who are secure will be able to: • Search the web efficiently to find temperatures of different cities and record this accurately. • Design a weather station that gathers and records sensor date, explaining how it works and the units of measurement it would use. • Design an automated machine that uses selection to respond to sensor data. • Search for and record weather forecast information in a spreadsheet and explain how this data is collected. • Create a video which includes weather forecast information. Key skills: • Using tablets or digital cameras to film a weather forecast.	Accurate, backdrop, climate zone, cold, collaboration, condensation, cylinder, degrees, evaporation, extreme weather, forecast, heat sensor, lightning, measurement, pinwheel, presenter, rain, satellite, script, sensitive, sensor data, solar panel, tablet, digital camera, temperature, thermometer, tornado, warm, weather, weather forecast, wind.

	goals, including collecting, analysing, evaluating and presenting data and information. NC Link: Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.	• Understanding that weather stations use sensors to gather and record data that predicts the weather. • Using keywords to effectively search for information on the internet. • Searching the internet for data. • Designing a device that gathers and records sensor data. • Recording data in a spreadsheet independently. • Sorting data in a spreadsheet to compare using the 'sort by…' option. • Understanding that data is used to forecast weather. Cross-curricular links: Science – temperature, evaporation and condensation, water cycle, observations and accurate measurements. Geography – physical geography including climate zones, biomes, vegetation belts, rivers, mountains, volcanoes and earthquakes. Maps, atlases, globes and digital/computer mapping. Counties and cities of the United Kingdom. Maths – bar charts, pictograms, tables and other graphs. English: Spoken Language – discussions, presentations, performances, role play, improvisations and debates. Y1 Su2 – Introduction to data Y2 Su2 – International Space Station Y3 Su2 – Comparison cards databases Key skill – valuing how world weather and how this varies around the world. Valuing	
Year Five			
Autumn 1 – Search engines	Lesson 1: Online protection (Online Safety L1) LO: To understand how apps can access personal information and how to alter the permissions. NC Link: Use technology safely, respectfully and responsibly;	Research skills and finding accurate information Pupils who are secure will be able to: • Explain what a search engine is, suggesting several search engines to use and explain how to use them to find websites and information.	Algorithm, appropriate, copyright, correct, credit, data leak, deceive, fair, fake, inappropriate, incorrect, index, information, keywords,

	recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. NC Link: 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. Lesson 2: Searching basics. LO: To understand what a search engine is and how to use it. Lesson 3: Inaccurate information. LO: To be aware that not everything online is true. Lesson 4: Web quest. LO: To search effectively. Lesson 5: Information poster. LO: To create an informative poster. Lesson 6: Web crawlers. LO: To understand how search engines work. NC Link: 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. NC Link: Use search technologies effectively, appreciate how results are selected and ranked, and be	• Suggest that things online aren't always true and recognise what to check for. • Explain why keywords are important and what TASK stands for, using three strategies to search effectively. • Recognise the terms 'copyright' and 'fair use' and combine text and images in a poster. • Make parallels between book searching and internet searching, explaining the role of web crawlers and recognising that results are rated to decide rank. Key skills: • Developing searching skills to help find relevant information on the internet. • Learning how to use search engines effectively to find information, focussing on keyword searches and evaluating search returns. • Learn about different forms of communication that have developed with the use of technology. • Recognising that information on the Internet might not be true or correct and learning ways of checking validity. RSE: Online Relationships – online shared data, online friendships and the risks of strangers. English: Spoken Language – consider and evaluate different viewpoints, attending to and building on the contributions of others. Y3, A1 – Networks Key skill – Independent and self-aware. Using reflection skills to evaluate online content and whether this is factual or not. 	network, privacy, rank, real, search engine, TASK, web crawler, website.

	discerning in evaluating digital content.		
Autumn 2 - Programming music	Lesson 1: Online communication (Online Safety L2) LO: To be aware of the positive and negative aspects of online communication NC Link: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. NC Link: 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. Lesson 2: Tinkering with Scratch music elements. LO: To tinker with Scratch music elements. Lesson 3: Scratch soundtracks. LO: To create a program that plays themed music. Lesson 4: Planning a soundtrack. LO: To program a soundtrack. Lesson 5: Battle of the bands. LO: To program music for a specific purpose.	Applying programming skills to create sounds and melodies leading to a battle of the bands performance. Pupils who are secure will be able to: • Iterate ideas, testing and changing throughout the lesson. • Explain what the basic commands do. • Explain how their program links to the theme. • Include a loop in their work. Correct their own simple mistakes. • Explain their scene in the story. Link musical concepts to their scene. Include a repeat and explain its function to enhance music. • Code a piece of music that combines a variety of structures. Use loops in their programming. • Recognise that programming music is a way to apply their skills. Key Skills: • Predicting how software will work based on previous experience. • Writing more complex algorithms for a purpose. • Iterating and developing their programming as they work. • Confidently using loops in their programming. • Using a more systematic approach to debugging code, justifying what is wrong and how it can be corrected. • Writing code to create a desired effect. • Using a range of programming commands. • Using repetition within a program. • Amending code within a live scenario. • Using logical thinking to explore software more independently, making predictions based on their previous experience. • Using a software programme (Scratch) to create music.	Bug, debug, loop, output, program, rhythm, soundtrack, timbre, code, decompose, music, pitch, repeat, Scratch, tempo tinker

		• Identify ways to improve and edit programs, videos, images etc. Cross -curricular links: Music – appreciate and understand a wide range of music. Play and perform in solo and ensemble contexts. Improvise and compose music for a range of purposes. English: Reading – identifying and discussing themes and convention. Making comparisons within and across books. Key Skill – valuing a wide range of music  Y4 A2 – Further coding with Scratch	
Spring 1 – Mars Rover 1	Lesson 1: Online reputation. (Online Safety L3) LO: To understand how online information can be used to form judgements. NC Link: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. NC Link: 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. Lesson 2: Mars Rover LO: To identify how and why data is collected from space. Lesson 3: Binary Code LO: To read and calculate numbers using binary code.	Identifying some of the types of data that the Mars Rover collects and explaining how the Mars Rover transmits the data back to Earth. Children will read binary numbers, and understand binary addition as well as identifying input, processing and output on the Mars Rovers. Pupils who are secure will be able to: • Identify some types of data the Mars Rover could collect (for example, photos). • Explain how the Mars Rover transmits the data back to Earth and the challenges involved. • Read any number in binary, up to 8 bits. • Identify input, processing and output on the Mars Rovers. • Read binary numbers and grasp the concept of binary addition. • Relate binary signals (Boolean) to a simple character-based language, ASCII. Key Skills: • Learning that a separate computer can program external devices. • Recognising how the size of RAM affects the processing of data. • Learning the vocabulary associated with data: data and transmit.	8-bit binary, ASCII, Boolean, addition, binary code, byte, CPU, data, data transmission, decimal numbers, discovery, distance, Hexadecimal, input, Mars Rover, the Moon, numerical data, output, planet, radio signal, RAM, scientist, sequence, signal, simulation, space, subtraction

	Lesson 4: Computer architecture. LO: To identify the computer architecture of the Mars Rovers. Lesson 5: Using binary – numbers LO: To use simple operations to calculate bit patterns. Lesson 6: Using binary – text. LO: To represent binary as text.	• Recognising that computers transfer data in binary and understanding simple binary addition. • Relating binary signals (Boolean) to the simple character-based language, ASCII. • Learning that messages can be sent by binary code, reading binary up to eight characters and carrying out binary calculations. • Understanding how data is collected in remote or dangerous places. • Understanding how data might be used to tell us about a location. • Learn about different forms of communication that have developed with the use of technology. Cross-curricular links: Maths – convert between different units of metric measure. Solve problems, involving addition, subtraction, multiplication and division. Solve practical problems. Science – describe the movement of the Earth and other planets relative to the sun in the solar system. Y4, Su2 – Investigating weather	
Spring 2 – Coding with Scratch: Developing games	Lesson 1: Online bullying (Online Lesson 4) LO: To discover ways to overcome bullying. NC Link: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. NC Link: 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.	Clipping blocks together in a program and predicting what will happen while making connections with previously used programming interfaces. Children create animations, recognise inputs/outputs, choose appropriate blocks, and break programs down into smaller steps. Pupils who are secure will be able to: • I can draw and rename a backdrop using blocks to make a maze. • I can select and edit a sprite. • I can program commands that control the movement of a sprite. • I can program consequences for specific actions. • I can draw my own sprite and a more complex maze backdrop. • I can program commands that change the backdrop. • I can program consequences for specific actions. • I can test and debug a program after making changes.	Scratch, Sprite, Stage, Backdrop, Costume, Code, Script, Blocks, Sequence, Algorithm, Event, Input, Output, Variable, Score, Lives, Loop, Condition, Debugging. Game

	Lesson 2 and 3: To design and program a maze game. Lesson 4: To design and program the next level for my maze game. Lesson 5: To design and program a game within Scratch using Boolean operators. Lesson 6: To program costume changes for a sprite in a game and add effects NC Link: 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. NC Link: Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.	• I can add sounds as a consequence of an action. • I can create new backdrops creating progression in my Maze Game. • I can create algorithms to switch backdrops as a consequence of an action. • I can add sounds as a consequence of an action. • I can create new backdrops creating progression in my Maze Game. • I can create algorithms to switch backdrops as a consequence of an action. • I can use decomposition to plan algorithms. • I understand what Boolean operators are. • I can use Boolean operators in algorithms. • I can debug algorithms. • I can design new costumes for an existing sprite. • I can amend algorithms to switch a sprite's costume. • I can add appropriate sound effects to complement a costume change. Maths – convert between different units of metric measure. Solve problems involving addition, subtraction, multiplication and division. Solve practical problems. Science – describe the movement of the Earth and other planets relative to the sun in the solar system. Key skill – Numerate. Using maths skills to support learning. Numerate	
Summer 1 – Stop motion animation	Lesson 1: Online health (Online Safety L5) LO: To understand how technology can affect health and wellbeing. NC Link: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. NC Link: Understand computer networks including the internet; how	Storyboarding ideas, taking photographs and editing to create a video animation. Pupils who are secure will be able to: • Create a toy with simple images and a single movement. • Create a short stop motion with small changes between images. • Think of a simple story idea for their animation and then decompose it into smaller parts to create a storyboard with simple characters. • Make small changes to the models to ensure a smooth animation and delete unnecessary frames.	Animation, animator, background, character, decomposition, design, digital device, edit, evaluate, flipbooj, fluid movement, frames, model, moving images, onion skinning, still images, stop motion, storyboard, thaumatrope, zoetrope

	they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration. Lesson 1: Animation explored LO: To understand what animation is. Lesson 2: Exploring stop-motion. LO: To understand what stop motion animation is. Lesson 3: Planning my stop-motion project. LO: To plan a stop motion video. Lesson 4: Stop motion creation. LO: To create a stop motion animation. Lesson 5: Editing my stop-motion project. LO: To edit my stop motion animation. NC Link: Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. NC Link: Design, write and debug programs that accomplish specific goals, including controlling or simulating, physical systems; solve problems by decomposing them into smaller part. NC Link: Select, use and combine a variety of software on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting,	• Add effects such as extending parts and titles. • Provide helpful feedback to other groups about their animations. Key Skills: • Decomposing animations into a series of images. • Decomposing a story to be able to plan a program to tell a story. • Using video editing software to animate. Art and design – develop techniques, including their control and their use of materials, with creatives and experimentation. Y2 Su1 – Stop motion Key skill – literate. Story writing. Literate	

	analysing, evaluating and presenting data and information.		
Summer 2 – Mars Rover 2	Lesson 1: Pixels LO: To recognise how bit patterns represent images as pixels. Lesson 2: Compressing images LO: To explain how the data for digital images can be compressed. Lesson 3: Fetch-Decode-Execute cycle LO: To identify and explain the fetch, decode and execute cycle. Lesson 4: Tinkering with CAD LO: To learn the basics of using Tinkercad through tutorials. Lesson 5: Tinkercad design LO: To design a functional tyre for the Mars rover using Tinkercad NC Link: 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. NC Link: Select, use and combine a variety of software 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.	Learning about pixels and binary, creating a pixel picture and saving a JPEG as a bitmap to understand the transfer of image data. Children will learn about the 'fetch, decode, execute' cycle and its real-world applications while beginning to use 3D design tools. Pupils who are secure will be able to: • Create a pixel picture, explaining that a pixel is the smallest element of a digital image and that binary is used to code and transfer this data. • Save a JPEG as a bitmap and recognise the difference in file size as well as explaining how pixels are used to transfer image data. • Explain the 'fetch, decode, execute' cycle in relation to real-world situations. • Create a profile with a safe and suitable username and password and begin to use 3D design tools. • Independently take tutorial lessons, applying what they have learnt to their design and understand the importance of using an online community responsibly. Key Skills: • Learning the difference between ROM and RAM. • Recognising how the size of RAM affects the processing of data. • Understanding the fetch, decode, execute cycle. • Learning how the data for digital images can be compressed. • Recognising that computers transfer data in binary and understanding simple binary addition. • Understanding how bit patterns represent images as pixels • Using logical thinking to explore software more independently, making predictions based on their previous experience. • Independently learning how to use 3D design software package TinkerCAD	3D, binary image, compression, data, fetch, decode, execute, input, memory, operating system, pixels, responsible, ROM, algorithm, CAD, CPU, drag and drop, ID card, JPEG, online community, output, RAM RGB, safe

		• Learn about different forms of communication that have developed with the use of technology. Art & Design – art and design techniques, including drawing, painting and sculpture. English – Spoken language – develop understanding through speculating, hypothesising, imagining and exploring ideas. RSE: Online Relationships – online friendships, sources of information including an awareness of the risks of strangers. Key skill - Independent and self-aware. Being aware of the risks of online strangers. 	
Year 6			
Autumn 1 – Bletchley Park	Lesson 1: Life Online (Online safety L1) LO: To describe online issues that give us negative feelings and know how to get help. NC Link: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Lesson 1: Secret codes LO: To understand there are many different types of secret codes. Lesson 2: Brute force hacking LO: To understand the importance of having a secure password. Lesson 3: Computers of the past	Discovering the history of Bletchley Park, historical figures, and computer science. Children learn about code-breaking and password hacking as well as decoding messages. Children present information about historical figures. Pupils who are secure will be able to: • Explain that codes can be used for a number of different reasons and decode messages. • Explain how to ensure a password is secure and how this works. • Explain the importance of historical figures and their contribution towards computer science. • Present information about their historical figures in an interesting and engaging manner. • Develop and idea for a computer of the future and create a simple design. • Produce a simple audio advert with simple edits, which demonstrate an understanding of how to use the software.	Acrostic code, ausio advert, brute force hacking, Caesar cipher, chip and PIN system, cipher, combination, date shift cipher, discovery, invention, Nth letter cipher, password, pigpen cipher, scrambled, script, secret, secure, technological advancement, trial and error.

	LO: To recognise the importance of the history of computers and create a well-researched presentation. Lesson 4: Future computer LO: To design a computer of the future. Lesson 5: Audio adverts LO: To create an audio advert for a future computer. NC Link: Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. NC Link: Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.	Key Skills: • Learning about the history of computers and how they have evolved over times. • Using past experiences to help solve new problems. • Writing increasingly complex algorithms for a purpose. • Debugging quickly and effectively to make a program more efficient. • Remixing existing code to explore a problem. • Changing a program to personalise it. • Evaluating a code to understand its purpose. • Predicting code and adapting it to a chosen purpose. • Using search and word processing skills to create a presentation. • Understanding how search engines work. • Using search engines safely and effectively. • Understanding the importance of secure passwords and how to create them. • Using the understanding of historic computers to design a computer of the future. • Planning, recording and editing an audio recording. • Creating and editing sound recordings for a specific purpose. History – a study of an aspect or theme in British history that extends pupils' chronological knowledge. Maths – solver number and practical problems. Read, write, order and compare numbers up to 10,000,000. RSE: know the rules and principles for keeping safe online and how to report them. English: Writing. Identifying the audience and purpose. Noting and developing initial ideas. Using further organisational and presentational devices to structure text. Design and Technology – use research and develop design criteria to inform the design of innovative, functional, appealing. Key skill – communicator. Making an advert to sell a new computer.	

		Communicator	
Autumn 2 – Computing Systems and networks: Exploring AI	Lesson 1: Sharing online (Online Safety L2) LO: To explore the impact and consequences of sharing online. NC Link: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Lesson 1: What is AI? LO: To explore the basics of AI. Lesson 2: AI and text LO: To recognise how AI processes and responds to text prompts. Lesson 3: AI through images. LO: To recognise how AI can be used to explore and generate images. Lesson 4: Coding AI LO: To apply AI-generated HTML code to the webside Trinket Lesson 5: Ethics and AI LO: To debate ethical implications of AI	Exploring what AI is and how it generates text, images and code, as well as learning about creating and refining prompts to improve AI responses white also considering the ethical implications of AI and its potential to replace human roles. Pupils who are secure will be able to: • Explain what AI is and its basic functions. • Identify real-life applications of AI that are commonly used in everyday life. • Identify how AI understands and processes text and image prompts. • Generate and refine prompts to achieve the best possible response from AI. • Identify how AI generates code and how it can be useful in web design. • Identify how AI can be a useful starting point for a project. • Explain the key ethical considerations of AI. • Debate the potential of AI replacing human roles, presenting well-structured arguments. Key Skills: • Identify different types of AI and their applications in everyday life. • Exploring text-based and image-based AI tools to understand how they generate content. • Applying coding skills like decomposition and pattern recognition to interact with AI applications. • Analysing the effectiveness of prompts and refining them for improved AI outputs. • Exploring ethical considerations around AI use and its impact on society. English: Writing – composition.	AI, AI-generated text, applications, code, debate, fake, HTML, instructions, output, AI-generate image, algorithm, authenticity, considerations, ethical, generate, implications, modify, prompt, refine, response, trained.

		Key skill – curious. Ask curious questions around AI's ethical implications. Curious	
Spring 1 – Intro to Python	Lesson 1: Creating a positive online reputation. (Online Safety L3) LO: To know how to create a positive online reputation. NC Link: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Lesson 1: Tinkering with Logo LO: To tinker with a new piece of software. Lesson 2: Nested loops. LO: To understand nexted loops. Lesson 3: Using python LO: To understand basic Python commands. Lesson 4: Using loops in Python. LO: To use loops when programming. Lesson 5: Coding Mondrian LO: To understand the use of random numbers. NC Link: Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve	Learning the fundamentals of the programming language of Python, they will test, change and explain what their program does. Children use loops and explain what repeats do and what the parts of the loop do while recognising that computers choose random numbers and decompose the program into an algorithm. Pupils who are secure will be able to: • Iterate ideas, testing and changing throughout the lesson and explain what their program does. • Use nested loops in their designs, explaining why they need two repeats. • Alter the house drawing using Python commands; use comments to show a level of understanding around what their code does. • Use loops in Python and explain what the parts of a loop do. • Recognise that computers can choose random numbers; decompose the program into an algorithm and modify a program to personalise it. Key Skills: • Decomposing a program into an algorithm. • Writing increasingly complex algorithms for a purpose. • Debugging quickly and effectively to make a program more efficient. • Remixing existing code to explore a problem. • Using and adapting nested loops. • Programming using the language Python. • Changing a program to personalise it. • Evaluating code to understand its purpose.	Algorithm, command, import, input, loop, patterns, remix, shape, code, design, indentation, instructions, output, random, repeat.

	problems by decomposing them into smaller parts. NC Link: Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.	• Using logical thinking to explore software independently, iterating ideas and testing continuously. Maths – compare and classify geometric shapes based on their properties and sizes. Describe positions on the full coordinate grid. Art – improve their mastery of art and design techniques, including drawing, painting and sculpture and know about great artists, architects and designers in history Y2 Sp2 – Stop motion Key Skill – independent and self-aware. Creating a positive online reputation. 	
Spring 2 – Big data 1	Lesson 1: Capturing evidence. (Online Safety L4) LO: To describe how to capture bullying content as evidence. NC Link: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Lesson 1: Barcodes LO: To identify how barcodes and QR codes work. Lesson 2: Transmitting data LO: To know how infrared waves transmit data.	Understanding about the use of big data including barcodes, QR codes, infrared, and RFID technologies. Children will create and scan their own QR codes, manipulate real-time data in spreadsheets, and present their findings. They also analyse transport data to understand its usefulness to commuters. Pupils who are secure will be able to: • Understand why barcodes and QR codes were created. • Create (and scan) their own QR code using a QR code generator website. • Explain how infrared can be used to transmit a Boolean type signal. • Explain how RFID works, recall a use of RFID chips, and type formulas into spreadsheets. • Take real-time data and enter it effectively into a spreadsheet.	Algorithm, Boolean, chip, contactless, encrypt, proximity, QR scanner, RFID, spreadsheet, barcode, brand, commuter, data, infrared, QR code, radio waves, signal, systems analyst, transmission, wireless.

	Lesson 3: RFID LO: To recognise how RFID is used. Lesson 4: Using RFID LO: To input and analyse real-world data. Lesson 5: Transport data. LO: To analyse and evaluate data. NC Link: 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. NC Link: 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.	• Presenting the data collected as an answer to a question. • Recognising the value of analysing real-time data. • Analyse and evaluate transport data and consider how this provides a useful service to commuters. Key Skills: • Understanding and identifying barcodes, QR codes and RFID. • Identifying devices and applications that can scan or read barcodes, QR codes and RFID. • Understanding how barcodes, QR codes and RFID work. • Gathering and analysing data in real time. • Creating formulas and sorting data within spreadsheets. • Learning how 'big data' can be used to solve a problem or improve efficiency. Science – recognise that light appears to travel in straight lines RSE: Online Relationships – the rules and principles for keeping safe online and how to report. How information and data is shared and used online. Maths: interpret and construct pie charts and line graphs and use these to solve problems. Complete, read and interpret information in tables.	
Summer 1 – Big data 2	Lesson 1: Password Protection (Online Safety L5) LO: To manage personal passwords effectively. NC Link: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Lesson 1: Transferring data	Understanding data usage through the use of mobile data vs WiFi, the Internet of Things, and big data. Identifying high/low data activities and preparing presentations on using Big Data/IoT to improve school efficiency while respecting privacy. Pupils who are secure will be able to: • Recognise that data can become corrupted within a network and that data sent in packets is more robust, as well as identify the need to update devices and software.	Big data, Bluetooth, corrupted, data, energy, GPS, improve, infrared, internet of things, personal, privacy, QR codes, revolution, RFID, SIM, simulation, smart city, smart school, stop motion, threat, wi-fi, wireless.

	LO: To explain how data can be safely transferred. Lesson 2: Data usage LO: To investigate the data usage of different online activities. Lesson 3: The Internet of Things LO: To identify how data collection can improve city life. Lesson 4: Designing a smart school LO: To design a system for turning a school into a smart school. Lesson 5: Smart school presentation. LO: To present ideas for turning a school into a smart school. NC Link: 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. NC Link: 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.	• Recognise differences between mobile data and WiFi and use a spreadsheet to compare and identify high-use data activities and low-use data activities. • Make links between the Internet of Things and Big Data and give a basic example of how data analysis/analytics can lead to improvement in town planning. • Explain ways that Big Data or IoT principles could be used to solve a problem or improve efficiency within the school and prepare a presentation about their idea, considering the privacy of some data. • Present their ideas about how Big Data/IoT can improve the school and provide feedback to others on their presentations. Key Skills: • Understanding how corruption can happen within data during transfer (for example when downloading, installing, copying and updating files). • Understanding that computer networks provide multiple services. • Using search and word processing skills to create a presentation. • Creating formulas and sorting data within spreadsheets. • Learning about the Internet of Things and how it has led to 'big data'. • Learning how 'big data' can be used to solve a problem or improve efficiency. Yr6 – Sp1 – Big Data 1 Physical Education – take part in outdoor and adventurous activity challenges. Maths – complete, read and interpret information in tables, including timetables. Geography – human geography, including: types of settlement and land use, economic activity and the distribution of natural resources. Design & Technology – use research and develop design criteria to inform the design of innovative, functional,	

		appealing products that are fit for purpose. Apply their understanding of computing to program, monitor and control their products. English: Spoken Language – participate in discussions, presentations, performances, role play, improvisations and debates. Key skill – literate. Communicating using presentations and performances. Literate	
Summer 2 – Inventing a product	Lesson 1: Think before you click (Online Safety L6) LO: To be aware of strategies that help protect people online. NC Link: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Lesson 1: Invention design LO: To design an electronic product. Lesson 2: Coding and debugging. LO: To code and debug a program. Lesson 3: Computer Aided Design (CAD) LO: To use CAD software to design a product. Lesson 4: My product's website. LO: To create a website. Lesson 5: Video advert LO: To create a video advert.	Designing a new electronic product and using CAD software to design appropriate housing for it. Developing skills in website design, video editing, and persuasive language to promote their product. Evaluating and adapting existing code, debugging programs, and searching for accurate information online. Pupils who are secure will be able to: • Evaluate code, understand what it does and adapt existing code for a specific purpose. • Debug programs and make them more efficient using sequence, selection, repetition or variables. • Design appropriate housing for their product using CAD software, including any input or output devices needed to make it work. • Create an appealing website for their product aimed at their target audience, which explains what their product is and what it does using persuasive language. • Create an edited video of their project, articulating the key benefits. • Describe and show how to search for information online and be aware of the accuracy of the results presented. Key Skills: • Using past experiences to help solve new problems.	Abstraction, adapt, advert, algorithm, bug, code, coding, debug, design, edit, electronic, evaluate, image rights, images, information, input, loop, photos, product, program, repetition, selection, sequence, software, structure, variable, video, website.

	NC Link: Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. NC Link: Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. NC Link: Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. NC Link: 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.	• Writing increasingly complex algorithms for a purpose. • Debugging quickly and effectively to make a program more efficient. • Remixing existing code to explore a problem. • Changing a program to personalise it • Evaluating code to understand its purpose. • Predicting code and adapting it to a chosen purpose • Using logical thinking to explore software independently, iterating ideas and testing continuously. • Creating and editing videos, adding multiple elements: music, voiceover, sound, text and transitions. • Using design software Tinkercad to design a product. • Creating a website with embedded links and multiple pages. • Understanding how search engines work. • Using search engines safely and effectively. Design and Technology – use research and develop design criteria to inform the design of innovative, functional, appealing products.; apply understanding of computing to program, monitor and control products; and generate, develop, model and communicate their ideas. English: Writing – Composition. Identifying audience and purpose and selecting appropriate grammar and vocabulary. Key skill – creative. Creating own webpage. Creative	