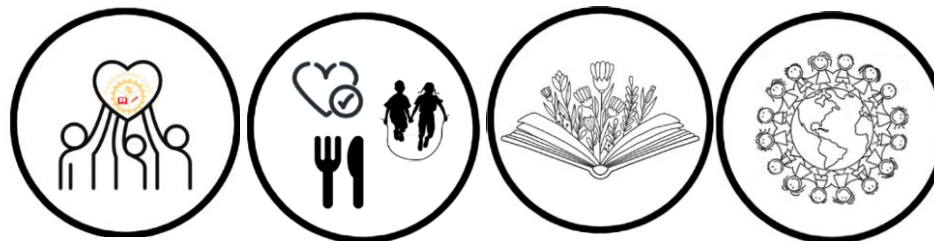


Progression Map

Computing





3 I's: Intent, Implementation, Impact

Intent

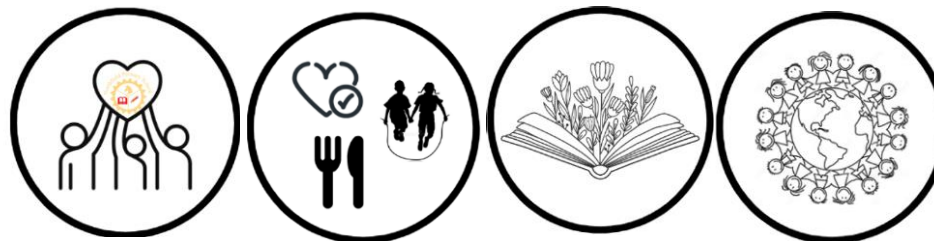
To be active and safe participants in a digital world with skills which enable them to learn, create and work in the modern and future world. Our curriculum exposes pupils to a range of software and technologies which enable them to build their skills and knowledge to a level which prepares them for the modern world. As well as developing their Computing skills *within* the Computing Curriculum stipulated by the National Curriculum, we are fiercely ambitious about the capacity for computing to support pupils to achieve high quality learning in other curriculum areas. We see Computing and our Digital Offer as an aspect of school life which exists both as a curriculum subject but also as a powerful and motivating vehicle for high quality education.

Implementation

We have created a comprehensive progression document for staff to follow to best embed and cover every element of the computing curriculum. It is well sequenced and ensures knowledge and skills are built on year on year. This is outlined in the computing progression plan so all staff can see what knowledge and skills the children have acquired and where their journey within computing will take them. Teachers plan effectively and deliver lessons that are engaging and that are accessible for all groups of learners.

Impact

We encourage our children to enjoy and value the curriculum we deliver. We will constantly ask the WHY behind their learning and not just the HOW. We want learners to discuss, reflect and appreciate the impact computing has on their learning, development and well-being. Finding the right balance with technology is key to an effective education and a healthy lifestyle. We feel the way we implement computing helps children realise the need for the right balance and one they can continue to build on in their next stage of education and beyond. We encourage regular discussions between staff and pupils to best embed and understand this. The way pupils showcase, share, celebrate and publish their work will best show the impact of our curriculum. We also look for evidence through reviewing pupil's knowledge and skills digitally and observing learning regularly. Progress of our computing curriculum is demonstrated through outcomes and the record of coverage in the process of achieving these outcomes.



National Curriculum

National Curriculum Aims

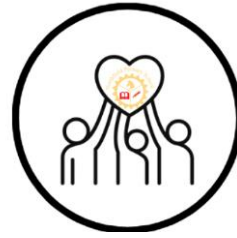
The national curriculum for computing aims to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation.
- can analyse problems in computational terms and have repeated practical experience of writing computer programs in order to solve such problems.
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems.
- are responsible, competent, confident and creative users of information and communication technology.

Key Stage 1

Pupils should be taught:

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.
- create and debug simple programs.
- use logical reasoning to predict the behaviour of simple programs.
- use technology purposefully to create, organise, store, manipulate and retrieve digital content.
- recognise common uses of information technology beyond school.
- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.



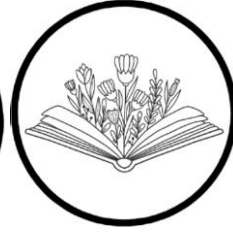
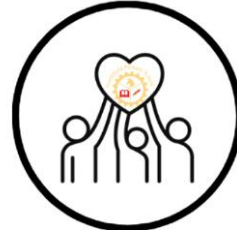
Key Stage 2

Pupils should be taught:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output.
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.
- understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration.
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.
- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.



	Computing Curriculum Map					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	Computing systems and networks- Technology around us	Creating media- Digital painting	Programming A- Moving a robot	Data and information- Grouping data	Creating media- Digital writing	Programming B- Programming animations
Year 2	Computing systems and networks- Information technology around us	Creating media- Digital photography	Programming A- Robot algorithms	Data and information- Pictograms	Creating media- Digital music	Programming B- Programming quizzes
Year 3	Computing systems and networks – Connecting computers	Creating media – Stop-frame animation	Programming A – Sequencing sounds	Data and information – Branching databases	Creating media – Desktop publishing	Programming B – Events and actions in programs
Year 4	Computing systems and networks – The internet	Creating media- Audio production	Programming A – Repetition in shapes	Data and information – Data logging	Creating media – Photo editing	Programming B – Repetition in games
Year 5	Computing systems and networks – Systems and searching	Creating media – Video production	Programming A – Selection in physical computing	Data and information – Flat-file databases	Creating media – Introduction to vector graphics	Programming B- Selection in quizzes
Year 6	Computing systems and networks – Communication and collaboration	Creating media – Web page creation	Programming A – Variables in games	Data and information – Spreadsheets	Creating media – 3D modelling	Programming B- Sensing movement

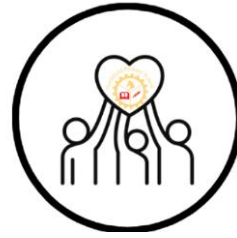


EYFS Progression Map Computing (Understanding the World)

Computing is not explicitly mentioned as part of the England FYFS curriculum. However, all aspects of computing are taught through the inclusion of devices/digital technology throughout continuous provision. Children are exposed to a range of devices including Bee-Bots, iPads, desktop PCs. Online Safety is taught once per half term.



	Topic	Lesson sequence	Success Criteria	Key vocabulary
Year 1				
Autumn 1	Computing systems and networks – Technology around us	<ul style="list-style-type: none"> To identify technology To identify a computer and its main parts To use a mouse in different ways To use a keyboard to type on a computer To use the keyboard to edit text To create rules for using technology responsibly – ONLINE SAFETY 	<ul style="list-style-type: none"> I can explain how these technology examples help us. I can explain technology as something that helps us. I can locate examples of technology in the classroom. I can name the main parts of a computer. I can switch on and login to a computer. I can use a mouse to click and drag. I can click and drag to make objects on a screen. I can use a mouse to create a picture. I can use a mouse to open a program. I can save my work to a file. I can say what a keyboard is for. I can type my name on a computer I can delete letters. I can open my work from a file. I can use the arrow keys to move the cursor. I can discuss how we benefit from these rules. I can give examples of some of these rules. I can identify rules to keep us safe and healthy when we are using technology in and beyond the home. 	technology computer, mouse, trackpad, keyboard, screen, double-click, typing.



<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Autumn 2</p>	<p>Creating media – digital painting</p>	<ul style="list-style-type: none"> • To describe what different freehand tools do • To use the shape tool and the line tools • To make careful choices when painting a digital picture • To explain why I chose the tools I used. • To use the computer on my own to paint a picture • To compare painting a picture on a computer and on paper 	<ul style="list-style-type: none"> • I can draw lines on a screen and explain which tools I used. • I can make marks on a screen and explain which tools I used. • I can use the paint tools to draw a picture. • I can make marks with the square and line tools. • I can use the shape and line tools effectively. • I can use the shape and line tools to recreate the work of an artist. • I can choose appropriate shapes. • I can create a picture in the style of an artist. • I can make appropriate colour choices. • I can choose appropriate paint tools and colours to recreate the work of an artist. • I can say which tools were helpful and why. • I know that different paint tools do different jobs. • I can change the colour and brush sizes. • I can make dots of colour on the page. • I can use dots of colour to create a picture in the style of an artist on my own. • I can explain that pictures can be made in lots of different ways. • I can say whether I prefer painting using a computer or using paper. • I can spot the differences between painting on a computer and on paper. 	<p>paint program, tool, paintbrush, erase, fill, undo, Piet Mondrian, primary colours, shape tool, line tool, fill tool, undo tool, Henri Matisse, Wassily Kandinsky, feelings, colour, brush style, Georges Seurat, pointillism, brush size, pictures, painting, computers, like, dislike.</p>
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Spring 1	Programming A – Moving a robot	<ul style="list-style-type: none"> • To explain what a given command will do • To act out a given word • To combine forwards and backwards commands to make a sequence • To combine four direction commands to make sequences • To plan a simple program • To find more than one solution to a problem. 	<ul style="list-style-type: none"> • I can match a command to an outcome. • I can predict the outcome of a command on a device. • I can run a command on a device. • I can follow and instruction. • I can give directions. • I can recall words that can be acted out. • I can compare forwards and backwards movements. • I can predict an outcome of a sequence involving forwards and backwards commands. • I can start a sequence from the same place. • I can compare left and right turns. • I can experiment with turn and move commands to move a robot. • I can predict the outcome of a sequence using four commands. • I can choose the order of commands in a sequence. • I can debug my program. • I can explain what my program should do. • I can identify several possible solutions. • I can plan two programs. • I can use two different programs to get to the same place. 	forwards, backwards, go, clear, commands, instructions, directions, left, right, turn, plan, algorithm, program, route.
		<ul style="list-style-type: none"> • SAFER INTERNET DAY lesson based on theme 		



<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Spring 2</p>	<p>Data and information – Grouping data</p>	<ul style="list-style-type: none"> • To label objects • To identify objects that can be counted • To describe objects in different ways • To count objects with the same properties • To compare groups of objects • To answer questions about groups of objects. 	<ul style="list-style-type: none"> • I can describe objects using labels. • I can identify the label for a group of objects. • I can match groups to objects. • I can count a group of objects. • I can count objects. • I can group objects. • I can describe an object. • I can describe a property of an object. • I can find objects with similar properties. • I can count how many objects share a property. • I can group objects in more than one way. • I can group similar objects. • I can choose how to group objects. • I can describe a group of objects. • I can record how many objects are in a group. • I can compare groups of objects. • I can decide how to group objects to answer a question. • I can record and share what I have found. 	<p>object, label, group, search, image, property, colour, size, shape, value, data set, group, more, less, most, fewest, least, the same.</p>
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<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Summer 1</p>	<p>Creating media – Digital writing</p>	<ul style="list-style-type: none"> • To use a computer to write • To add or remove text on a computer • To identify that the look of text can be changed on a computer • To make careful choices when changing text • To explain why I used the tools that I chose • To compare typing on a computer to writing on paper 	<ul style="list-style-type: none"> • I can identify and find keys on a keyboard. • I can open a word processor. • I can recognise keys on a keyboard. • I can enter text into a computer. • I can use backspace to remove text. • I can use letter, number, and space keys. • I can explain what the keys that I have learnt about already do. • I can identify the toolbar and use bold, italic, and underline. • I can type capital letters. • I can change the font. • I can select all of the text by clicking and dragging. • I can select a word by double-clicking. • I can decide if my changes have improved my writing. • I can say what tool I used to change the text. • I can use 'undo' to remove changes. • I can explain the differences between typing and writing. • I can make changes to text on a computer. • I can say why I prefer typing or writing. 	<p>word processor, keyboard, keys, letter, type, numbers, space, back space, text cursor, capital letters, toolbar, bold, italic, underline, mouse, select, font, undo, redo, format, compare, typing, writing.</p>
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Summer 2	Programming B- Programming animations	<ul style="list-style-type: none"> • To choose a command for a given purpose • To show that a series of commands can be joined together • To identify the effect of changing a value • To explain that each sprite has its own instructions • To design parts of a project • To use my algorithm to create a program 	<ul style="list-style-type: none"> • I can compare different programming tools. • I can find which commands to move a sprite. • I can use commands to move a sprite. • I can run my program. • I can use a Start block in my program. • I can use more than one block by joining them together. • I can change the value. • I can find blocks that have numbers. • I can say what happens when I change a value. • I can add blocks to each of my sprites. • I can delete a sprite. 	Scratch Jr, Bee-bot, command, sprite, compare, programming, programming area, block, joining, Start block, run, program, background, delete, reset, algorithm, predict, effect, change, value, instructions, sprite, appropriate, programming blocks.
		<ul style="list-style-type: none"> • PROJECT EVOLVE - 	<ul style="list-style-type: none"> • I can show that a project can include more than one sprite. • I can choose appropriate artwork for my project. • I can create an algorithm for each sprite. • I can describe how each sprite will move. • I can add programming blocks based on my algorithm. • I can test the programs I have created. • I can use sprites that match my design. 	



Year 2

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Autumn 1</p>	<p>Computing systems and networks – Information technology around us</p>	<ul style="list-style-type: none"> • To recognise the uses and features of information technology • To identify the uses of information technology in the school • To identify information technology beyond school • To explain how information technology helps us • To explain how to use information technology safely – ONLINE SAFETY • To recognise that choices are made when using information technology – ONLINE SAFETY 	<ul style="list-style-type: none"> • I can describe some uses of computers. • I can identify examples of computers. • I can identify that a computer is part of IT. • I can identify examples of information technology. • I can identify that some information technology can be used in more than one way. • I can sort information technology by what it's used for. • I can find examples of information technology. • I can sort information technology by where it is found. • I can talk about uses of information technology. • I can identify how IT devices work together. • I can recognise common types of technology. • I can say why we use information technology. • I can list different uses of information technology. • I can say how rules can keep me safe. • I can talk about different rules for using IT. • I can explain the need to use IT in different ways. • I can identify the choices that I make when using information technology. • I can use information technology for different types of activities. 	<p>Information technology (IT), computer, barcode, scanner/scan.</p>
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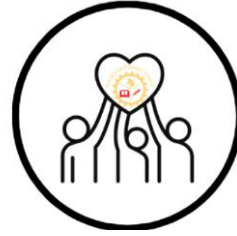
Autumn 2	<p>Creating media – Digital photography</p>	<ul style="list-style-type: none"> • To use a digital device to take a photograph • To make choices when taking a photograph • To describe what makes a good photograph • To decide how photographs can be improved • To use tools to change an image. • To recognise that photos can be changed. – ONLINE SAFETY 	<ul style="list-style-type: none"> • I can explain what I did to capture a digital photograph. • I can recognise what devices can be used to take photographs. • I can talk about how to take a photograph. • I can explain the process of taking a good photograph. • I can explain why a photograph look better in portrait or landscape format. • I can take photographs in both portrait and landscape format. • I can discuss how to take a good photograph. • I can identify what is wrong with a photograph. • I can improve a photograph by retaking it. • I can experiment with different light sources. • I can explain why a picture may have been unclear. • I can explore the effect that light has on a photograph. • I can explain my choices. • I can recognise that images can be changed. • I can use a tool to achieve a desired effect. • I can apply a range of photography skills to capture a photograph. • I can identify which photographs are real and which have been changed. • I can recognise which photographs have been changed. 	<p>device, camera, photograph, capture, image, detail, framing, subject, compose, light sources, flash, focus, background, editing, filter, format, lighting.</p>
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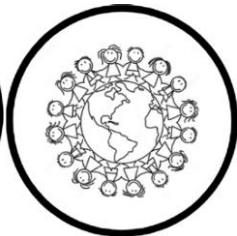
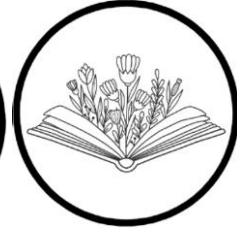
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Spring 1</p>	<p>Programming A – Robot algorithms</p>	<ul style="list-style-type: none"> • To describe a series of instructions as a sequence • To explain what happens when we change the order of instructions • To use logical reasoning to predict the outcome of a program • To explain that programming projects can have code and artwork • To design an algorithm • To create and debug a program that I have written 	<ul style="list-style-type: none"> • I can choose a series of words that can be enacted as a sequence. • I can follow instructions given by someone else. • I can give clear instructions. • I can show the difference in the outcomes between two sequences that consist of the same commands. • I can use an algorithm to program a sequence on a floor robot. • I can use the same instructions to create different algorithms. • I can compare my prediction to the program outcome. • I can follow a sequence. • I can predict the outcome of a sequence. • I can explain the choices that I made for my mat design. • I can identify different routes around my mat. 	<p>instruction, sequence, clear, unambiguous, algorithm, program, order, prediction, artwork, design, route, map, debugging, decomposition.</p>
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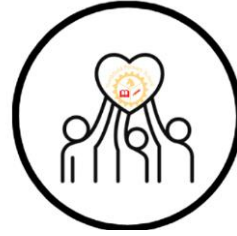
		<p>SAFER INTERNET DAY lesson based on theme</p>	<ul style="list-style-type: none">• I can test my mat to make sure that it is useable.• I can create an algorithm to meet my goal.• I can explain what my algorithm should achieve.• I can use my algorithm to create a program.• I can plan algorithms for different parts of a task.• I can put together the different parts of my program.• I can test and debug each part of the program.	
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<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Spring 2</p>	<p>Data and information – Pictograms</p>	<ul style="list-style-type: none"> • To recognise that we can count and compare objects using tally charts • To recognise that objects can be represented as pictures. • To create a pictogram • To select objects by attribute and make comparisons • To recognise that people can be described by attributes • To explain that we can present information using a computer 	<ul style="list-style-type: none"> • I can compare totals in a tally chart. • I can record data in a tally chart. • I can represent a tally count as a total. • I can enter data onto a computer. • I can use a computer to view data in a different format. • I can use pictograms to answer simple questions about objects. • I can explain what the pictogram shows. • I can organise data in a tally chart. • I can use a tally chart to create a pictogram. • I can answer 'more than'/'less than' and 'most/least questions about an attribute. • I can create a pictogram to arrange objects by an attribute. • I can tally objects using a common attribute. • I can choose a suitable attribute to compare people. • I can collect the data I need. • I can create a pictogram and draw conclusions from it. • I can give simple examples of why information should not be shared. • I can share what I have found out using a computer. • I can use a computer program to present information in different ways. 	<p>more than, less than, most, least, organise, data, object, tally chart, votes, total, pictogram, enter, compare, count, explain, more common, least common, attribute, group, same, different, most popular, least popular, conclusion, block diagram, sharing.</p>
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Summer 1	Creating media – Digital music	<ul style="list-style-type: none"> • To say how music can make us feel • To identify that there are patterns in music. • To experiment with sound using a computer • To use a computer to create a musical pattern • To create music for a purpose • To review and refine our computer work. 	<ul style="list-style-type: none"> • I can describe music using adjectives. • I can identify simple differences in pieces of music. • I can say what I do and do not like about a piece of music. • I can create a rhythm pattern. • I can explain that music is created and played by humans. • I can play an instrument following a rhythm pattern. • I can connect images with sounds. • I can relate an idea to a piece of music. • I can use a computer to experiment with pitch. • I can explain how my music can be played in different ways. • I can identify the music is a sequence of notes. • I can refine my musical patten on a computer. • I can add a sequence of notes to my rhythm. • I can create a rhythm which represents an animal I've chosen. • I can create my animals rhythm on a computer. • I can explain how I changed my work. • I can listen to music and describe how it makes me feel. • I can review my work. 	music, planets, Mars, Venus, War, peace, quiet, loud, feelings, emotions, pattern, rhythm, pulse, Neptune, pitch, tempo, notes, pattern, instruments, create, beat, open, edit.
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Summer 2	Programming B – Programming quizzes	<ul style="list-style-type: none"> To explain that a sequence of commands has a start To explain that a sequence of commands has an outcome To create a program using a given design To change a given design. To create a program using my own design To decide how my project can be improved 	<ul style="list-style-type: none"> I can identify that a program needs to be started. I can identify the start of a sequence. I can show how to run my program. I can change the outcome of a sequence of commands. I can match two sequences with the same outcome. I can predict the outcome of a sequence of commands. I can build the sequence of blocks I need. I can decide which blocks to use to meet the design. I can work out the actions of a sprite in an algorithm. I can choose backgrounds for the design. I can choose characters for the design. I can create a program based on the new design. I can build a sequence of blocks to match my design. I can choose the images for my own design. I can create an algorithm. I can compare my project to my design. I can debug my program. I can improve my project by adding features. 	sequence, command, program, run, start, outcome, predict, program, blocks, sprite, algorithm, design, actions, sprite, project, modify, change build, match, compare, debug, features, evaluate
		<ul style="list-style-type: none"> PROJECT EVOLVE 		



Year 3

Autumn 1	Computing systems and networks – Connecting computers	<ul style="list-style-type: none"> • To explain how digital devices function • To identify input and output devices • To recognise how digital devices can change the way we work • To explain how a computer network can be used to share information – ONLINE SAFETY • To explore how digital devices can be connected • To recognise the physical components of a network 	<ul style="list-style-type: none"> • I can explain that digital devices accept inputs. • I can explain that digital devices produce outputs. • I can follow a process. • I can classify input and output devices. • I can describe a simple process. • I can design a digital device. • I can explain how I use a digital device for different activities. • I can recognise similarities between using digital devices and non-digital tools. • I can suggest differences between using digital devices and non-digital tools. • I can discuss why we need a network switch. • I can explain how messages are passed through multiple connections. • I can recognise different connections. • I can demonstrate how information can be passed between devices. • I can explain the role of a switch, server, and wireless access point in a network. • I can recognise that a computer network is made up of a number of devices. • I can identify how devices in a network are connected together. • I can identify networked devices around me. • I can identify the benefits of computer networks. 	digital device, input, process, output, program, digital, non-digital, connection, network, switch, server, wireless access point, cables, sockets.
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Autumn 2	Creating media – Stop-frame animation	<ul style="list-style-type: none"> • To explain that an animation is a sequence of drawings or photos • To relate animated movement with a sequence of images • To plan an animation • To identify the need to work consistently and carefully • To review and improve an animation • To evaluate the impact of adding other media to an animation 	<ul style="list-style-type: none"> • I can create an effective flip book-style animation. • I can draw a sequence of pictures. • I can explain how an animation/flip-book works. • I can create an effective stop-frame animation. • I can explain why little changes are needed for each frame. • I can predict what an animation will look like. • I can break down a storyline into settings, characters and events. • I can create a storyboard. • I can describe an animation that is achievable on screen. • I can evaluate the quality of my animation. • I can review a sequence of frames to check my work. • I can use onion skinning to help me make small changes between frames. • I can evaluate another learner’s animation. • I can explain ways to make my animation better. • I can improve my animation based on feedback. • I can add other media to my animation. • I can evaluate my final film. • I can explain why I added other media to my animation. 	<p>animation, flip book, stop-frame, frame, sequence, image, photograph, setting, character, events, onion skinning, consistency, evaluation, delete, media, import, transition.</p>
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<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Spring 1</p>	<p>Programming A – Sequencing sounds</p>	<ul style="list-style-type: none"> • To explore a new programming environment • To identify that commands have an outcome • To explain that a program has a start • To recognise that a sequence of commands can have an order • To change the appearance of my project • To create a project from a task description 	<ul style="list-style-type: none"> • I can explain that objects in Scratch have attributes (linked to). • I can identify the objects in a Scratch project (sprites, backdrops). • I can recognise that commands in Scratch are represented as blocks. • I can choose a word which describes an on-screen action for my plan. • I can create a program following a design. • I can identify that each sprite is controlled by the commands I choose. • I can create a sequence of connected commands. • I can explain that the objects in my project will respond exactly to the code. • I can start a program in different ways. 	<p>Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, motion, turn, point in direction, go to, glide, sequence,</p>
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		<ul style="list-style-type: none"> • SAFER INTERNET DAY lesson based on theme 	<ul style="list-style-type: none"> • I can combine sound commands. • I can explain what a sequence is. • I can order notes into a sequence. • I can build a sequence of commands. • I can decide the actions for each sprite in a program. • I can make design choices for my artwork. • I can identify and name the objects I will need for a project. • I can implement my algorithm as code. • I can relate a task description to a design. 	<p>event, task, design, run the code, order, note, chord, algorithm, bug, debug, code.</p>
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<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Spring 2</p>	<p>Data and information – Branching databases</p>	<ul style="list-style-type: none"> • To create questions with yes/no answers • To identify the attributes needed to collect data about an object • To create a branching database • To explain why it is helpful for a database to be well structured • To plan the structure of a branching database • To independently create an identification tool 	<ul style="list-style-type: none"> • I can create two groups of objects separated by one attribute. • I can investigate questions with yes/no answers. • I can make up a yes/no question about a collection of objects. • I can arrange objects into a tree structure. • I can create a group of objects within an existing group. • I can select an attribute to separate objects into groups. • I can group objects using my own yes/no questions. • I can select objects to arrange in a branching database. • I can test my branching database to see if it works. • I can compare two branching database structures. • I can create yes/no questions using given attributes. • I can explain that questions need to be ordered carefully to split objects into similarly sized groups. • I can create a physical version of a branching database. • I can create questions that will enable objects to be uniquely identified. • I can independently create questions to use in a branching database. • I can create a branching database that reflects my plan. • I can suggest real-world uses for branching databases. • I can work with a partner to test my identification tool. 	<p>attribute, value, questions, table, objects, branching, database, objects, equal, even, separate, structure, compare, order, organise, selecting, information, decision tree.</p>
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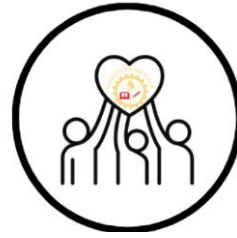
<p>Summer 1</p>	<p>Creating media – Desktop publishing</p>	<ul style="list-style-type: none"> • To recognise how text and images convey information • To recognise that text and layout can be edited • To choose appropriate page settings • To add content to a desktop publishing publication • To consider how different layouts can suit different purposes • To consider the benefits of desktop publishing 	<ul style="list-style-type: none"> • I can explain the differences between text and images. • I can identify the advantages and disadvantages of using text and images. • I can recognise that text and images can communicate messages clearly. • I can change font style, size, and colours for a given purpose. • I can edit text. • I can explain that text can be changed to communicate more clearly. • I can create a template for a particular purpose. • I can define the term ‘page orientation.’ • I can recognise placeholders and say why they are important. • I can choose the best locations for my content. • I can make changes to content after I’ve added it. • I can paste text and images to create a magazine cover. • I can choose a suitable layout for a given purpose. • I can identify different layouts. • I can match a layout to a purpose. • I can compare work made on desktop publishing to work created by hand. • I can identify the uses of desktop publishing in the real world. • I can say why desktop publishing might be helpful. 	<p>text, images, advantages, disadvantages, communicate, font, style, landscape, portrait, orientation, placeholder, template, layout, content, desktop publishing, copy, paste, purpose, benefits.</p>
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<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Summer 2</p>	<p>Programming B – Events and actions in programs</p>	<ul style="list-style-type: none"> • To explain how a sprite moves in an existing project • To create a program to move a sprite in four directions • To adapt a program to a new context • To develop my program by adding features • To identify and fix bugs in a program • To design and create a maze-based challenge 	<ul style="list-style-type: none"> • I can choose which keys to use for actions and explain my choices. • I can explain the relationship between an event and an action. • I can identify the way to improve a program. • I can choose a character for my project. • I can choose a suitable size for a character in a maze. • I can program movement. • I can choose blocks to set up my program. • I can consider the real world when making design choices. • I can use a programming extension. • I can build more sequences of commands to make my design work. • I can choose suitable keys to turn on additional features. 	<p>motion, event, sprite, algorithm, logic, move, resize, extension block, pen up, set up, pen, design, action, debugging, errors,</p>
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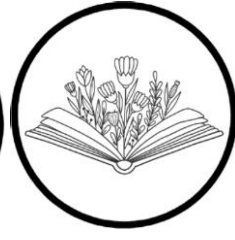


		<ul style="list-style-type: none">• PROJECT EVOLVE	<ul style="list-style-type: none">• I can identify additional features (from a given set of blocks).• I can match a piece of code to an outcome.• I can modify a program using a design.• I can test a program against a given design.• I can evaluate my project.• I can implement my design.• I can make design choices and justify them.	setup, code, test, debug, actions.
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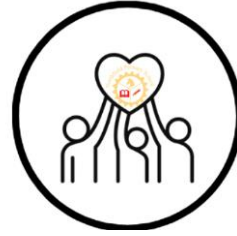


Year 4

Autumn 1	Computing system and networks – The Internet	<ul style="list-style-type: none"> • To describe how networks physically connect to other networks • To recognise networked devices make up the internet • To outline how websites can be shared via the World Wide Web (WWW) • To describe how content can be added and accessed on the WWW • To recognise how the content of the WWW is created by people – ONLINE SAFETY • To evaluate the consequences of unreliable content- ONLINE SAFETY 	<ul style="list-style-type: none"> • I can demonstrate how information is shared across the internet. • I can describe the internet as a network of networks. • I can discuss why a network needs protecting. • I can describe networked devices and how they connect. • I can explain that the internet is used to provide many services. • I can recognise that the WWW contains websites and web pages. • I can describe how to access websites on the WWW. • I can describe where websites are stored when uploaded to the WWW. • I can explain the types of media that can be shared on the WWW. • I can explain that internet services can be used to create content online. • I can explain what media can be found on websites. • I can recognise that I can add content to the WWW. • I can explain that there are rules to protect content. • I can explain that websites and their content are created by people. • I can suggest who owns the content on websites. • I can explain that not everything on the WWW is true. • I can explain why I need to think carefully before I share or reshare content. • I can explain why some information I find online may not be honest, accurate, or legal. 	<p>internet, network, router, security, switch, server, wireless access point (WAP), website, web page, web address, routing, web browser, World Wide Web, content, links, files, use, download, sharing, ownership, permission, information, accurate, honest, content, adverts</p>
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Autumn 2	Creating media- Audio production	<ul style="list-style-type: none"> • To identify that sound can be recorded • To explain that audio recordings can be edited • To recognise the different parts of creating a podcast project • To apply audio editing skills independently • To combine audio to enhance my podcast project • To evaluate the effective use of audio 	<ul style="list-style-type: none"> • I can explain that the person who records the sound can say who is allowed to use it. • I can identify the input and output devices used to record and play sound. • I can use a computer to record audio. • I can discuss what sounds can be added to a podcast. • I can inspect the soundwave view to know where to trim my recording. • I can re-record my voice to improve my recording. • I can explain how sounds can be combined to make a podcast more engaging. • I can plan appropriate content for a podcast. • I can save my project so that different parts remain editable. • I can improve my voice recordings. • I can record content following my plan. • I can review the quality of my recordings. • I can arrange multiple sounds to create the effect I want. • I can explain the difference between saving a project and exporting an audio file. • I can open my project to continue working on it. • I can choose appropriate edits to improve my podcast. • I can listen to an audio recording to identify its strength. • I can suggest improvements to an audio recording. 	<p>audio, microphone, speaker, headphones, input device, output device, sound, podcast, edit, trim, align, layer, import, record, playback, selection, load, save, export, MP3, evaluate, feedback.</p>
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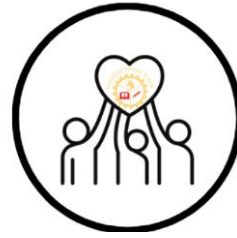
Spring 1	<p>Programming A – Repetition in shapes</p>	<ul style="list-style-type: none"> To identify that accuracy in programming is important To create a program in a text-based language To explain what ‘repeat’ means To modify a count-controlled loop to produce a given outcome To decompose a task into small steps To create a program that uses count-controlled loops to produce a given outcome 	<ul style="list-style-type: none"> I can create a code snippet for a given purpose. I can explain the effect of changing a value of a command. I can program a computer by typing commands. I can test my algorithm in a text-based language. I can use a template to create a design for my program. I can write an algorithm to produce a given outcome. I can identify everyday tasks that include repetition as part of a sequence, e.g., brushing teeth, dance moves. I can identify patterns in a sequence. I can use count-controlled loops to produce a given outcome. I can choose which values to change in a loop. I can identify the effect of changing the number of times a task is repeated. I can predict the outcome of a program containing a count-controlled loop. I can explain that a computer can repeatedly call a procedure. I can identify ‘chunks’ of actions in the real world. I can use a procedure in a program. I can design a program that includes count-controlled loops. I can develop my program by debugging it. I can make use of my design to write a program. 	<p>Logo (programming environment), program, turtle, commands, code snippet, algorithm, design, debug, pattern, repeat, repetition, count-controlled loop, value, trace, decompose, procedure.</p>
	<ul style="list-style-type: none"> SAFER INTERNET DAY lesson based on theme 			



<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Spring 2</p>	<p>Data and information – Data logging</p>	<ul style="list-style-type: none"> • To explain that data gathered over time can be used to answer questions • To use a digital device to collect data automatically • To explain that a data logger collects ‘data points’ from sensors over time • To recognise how a computer can help us analyse data • To identify the data needed to answer questions • To use data from sensors to answer questions 	<ul style="list-style-type: none"> • I can choose a data set to answer a given question. • I can identify data that can be gathered over time. • I can suggest questions that can be answered using a given data set. • I can explain what data can be collected using senses. • I can identify that data from sensors can be recorded. • I can use data from a sensor to answer a given question. • I can identify the intervals used to collect data. • I can recognise that a data logger collects data at given points. • I can talk about the data that I have captured. • I can explain that there are different ways to view data. • I can sort data to find information. • I can view data at different levels of detail. • I can plan how to collect data using a data logger. • I can propose a question that can be answered using logged data. • I can use a data logger to collect data. • I can draw conclusions from the data that I have collected. • I can explain the benefits of using a data logger. • I can interpret data that has been collected using a data logger. 	<p>data, table, layout, input device, sensor, logger, logging, data point, interval, analyse, dataset, import, export, logged, collection, review, conclusion.</p>
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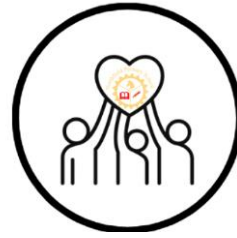
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Summer 1</p>	<p>Creating media – Photo editing</p>	<ul style="list-style-type: none"> • To explain that the composition of digital images can be changed • To explain that colours can be changed in digital images • To explain how cloning can be used in photo editing • To explain that images can be combined • To combine images for a purpose • To evaluate how changes can improve an image <p style="background-color: yellow; display: inline-block; padding: 2px;">LINK TO ONLINE SAFETY</p>	<ul style="list-style-type: none"> • I can explain why I might crop an image. • I can improve my image by rotating it. • I can use photo editing software to crop an image. • I can experiment with different colour effects. • I can explain that different colour effects make you think and feel different things. • I can explain why I chose certain colour effects. • I can add to the composition of an image by cloning. • I can identify how a photo edit can be improved. • I can remove parts of an image using cloning. • I can experiment with tools to select and copy part of an image. • I can explain why photos might be edited. • I can use a range of tools to copy between images. • I can choose suitable images for my project. • I can create a project that is a combination of other images. • I can describe the image that I want to create. • I can combine text and my image to complete the project. • I can review images against a given criteria. • I can use feedback to guide making changes. 	<p>image, edit, digital, crop, rotate, undo, save, adjustments, effects, colours, hue, saturation, sepia, vignette, image, retouch, clone, select, combine, made up, real, composite, cut, copy, paste, alter, background, foreground, zoom, undo, font.</p>
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Summer 2	Programming B – Repetition in games	<ul style="list-style-type: none"> • To develop the use of count-controlled loops in a different programming environment • To explain that in programming there are infinite loops and count controlled loops • To develop a design that includes two or more loops which run at the same time • To modify an infinite loop in a given program • To design a project that includes repetition • To create a project that includes repetition 	<ul style="list-style-type: none"> • I can list an everyday task as a set of instructions including repetition. • I can modify a snippet of code to create a given outcome. • I can predict the outcome of a snippet of code. • I can choose when to use a count-controlled loop and an infinite loop. • I can modify loops to produce a given outcome. • I can recognise that some programming languages enable more than one process to be run at once. • I can choose which action will be repeated for each object. • I can evaluate the effectiveness of the repeated sequences used in my program. • I can explain what the outcome of the repeated action should be. • I can explain the effect of my changes. • I can identify which parts of a loop can be changed. • I can re-use existing code snippets on new sprites. • I can develop my own design explaining what my project will do. • I can evaluate the use of repetition in a project. 	Scratch, programming, sprite, blocks, code, loop, repeat, value, infinite loop, count-controlled loop, costume, repetition, forever, animate, event block, duplicate, modify, design,
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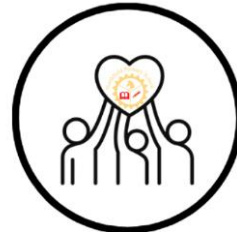


		<ul style="list-style-type: none">• PROJECT EVOLVE	<ul style="list-style-type: none">• I can select key parts of a given project to use in my own design.• I can build a program that follows my design.• I can evaluate the steps I followed when building my project.• I can refine my algorithm in my design.	algorithm, debug, refine, evaluate.
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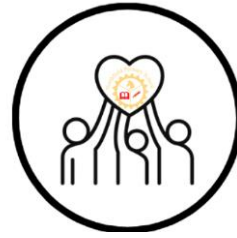


Year 5

Autumn 1	<p>Computing systems and networks – Systems and searching</p>	<ul style="list-style-type: none"> • To explain that computers can be connected together to form systems • To recognise the role of computer systems in our lives – ONLINE SAFETY • To experiment with search engines • To describe how search engines select results • To explain how search results are ranked • To recognise why the order of results is important, and to whom – ONLINE SAFETY 	<ul style="list-style-type: none"> • I can describe that a computer system features inputs, processes and outputs. • I can explain that computer systems communicate with other devices. • I can explain that systems are built using a number of parts. • I can explain the benefits of a given computer system. • I can identify tasks that are managed by computer systems. • I can identify the human elements of a computer system. • I can compare results from different search engines. • I can make use of a web search to find specific information. • I can refine my web search. • I can explain why we need tools to find things online. • I can recognise the role of web crawlers in creating an index. • I can relate a search term to the search engine's index. • I can explain that a search engine follows rules to rank results. • I can give examples of criteria used by search engines to rank results. • I can order a list by rank. • I can describe some of the ways that search results can be influenced. • I can explain how search engines make money. • I can recognise some of the limitations of search engines. 	<p>system, connection, digital, input, process, storage, output, search, search engine, refine, index, bot, ordering, links, algorithm, search engine optimisation (SEO), web crawler, content creator, selection, ranking.</p>
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<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Autumn 2</p>	<p>Creating media – Video production</p>	<ul style="list-style-type: none"> • To explain what makes a video effective • To identify digital devices that can record video • To capture video using a range of techniques • To create a storyboard • To identify that video can be improved through reshooting and editing • To consider the impact of the choices made when making and sharing a video 	<ul style="list-style-type: none"> • I can compare features in different videos. • I can explain that video is a visual media format. • I can identify features of videos. • I can experiment with different camera angles. • I can identify and find features on a digital video recording device. • I can make use of a microphone. • I can capture video using a range of filming techniques. • I can review how effective my video is. • I can suggest filming techniques for a given purpose. • I can create and save video content. • I can decide which filming techniques I will use. • I can outline the scenes of my video. • I can explain how to improve a video by reshooting and editing. • I can select the correct tools to make edits to my video. • I can store, retrieve and export my recording to a computer. • I can evaluate my video and share my opinions. • I can make edits to my video and improve the final outcome. • I can recognise that my choices when making a video will impact on the quality of the final outcome. 	<p>video, audio, camera, talking head, panning, close up, video camera, microphone, lens, mid-range, long shot, moving subject, side by side, angle (high, low, normal), static, zoom, pan, tilt, storyboard, filming, review, import, split, trim, clip, edit, reshoot, delete, reorder, export, evaluate, share.</p>
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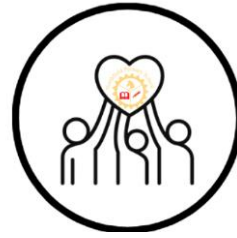
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Spring 1</p>	<p>Programming A – Selection in physical computing</p>	<ul style="list-style-type: none"> • To control a simple circuit connected to a computer • To write a program that includes count-controlled loops • To explain that a loop can stop when a condition is met • To explain that a loop can be used to repeatedly check whether a condition has been met • To design a physical project that includes selection • To create a program that controls a physical computing project 	<ul style="list-style-type: none"> • I can create a simple circuit and connect it to a microcontroller. • I can explain what an infinite loop does. • I can program a microcontroller to make an LED switch on. • I can connect more than one output component to a microcontroller. • I can design sequences that use count-controlled loops. • I can use a count-controlled loop to control outputs. • I can design a conditional loop. • I can explain that a condition is either true or false. • I can program a microcontroller to respond to an input. • I can explain that a condition being met can start an action. • I can identify a condition and an action in my project. 	<p>microcontroller, USB, components, connection, infinite loop, output component, motor, repetition, count-controlled loop, Crumble controller, switch, LED, Sparkle, crocodile clips, connect, battery box, program, condition, input,</p>
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		<ul style="list-style-type: none"> • SAFER INTERNET DAY lesson based on theme 	<ul style="list-style-type: none"> • I can use selection (an 'if...then...' statement) to direct the flow of a program. • I can create a detailed drawing of my project. • I can describe what my project will do. • I can identify a real-world example of a condition starting an action. • I can test and debug my program. • I can use selection to produce an intended outcome. • I can write an algorithm that describes what my model will do. 	<p>output, selection, action, debug, circuit, power, cell, buzzer</p>
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<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Spring 2</p>	<p>Data and information – Flat-file databases</p>	<ul style="list-style-type: none"> • To use a form to record information • To compare paper and computer-based databases • To outline how you can answer questions by grouping and then sorting data • To explain that tools can be used to select specific data • To explain that computer programs can be used to compare data visually • To use a real-world database to answer questions 	<ul style="list-style-type: none"> • I can create a database using cards. • I can explain how information can be recorded. • I can order, sort and group my data cards. • I can choose which field to sort data by to answer a given question. • I can explain what a field and a record is in a database. • I can navigate a flat-file database to compare different views of information. • I can combine grouping and sorting to answer specific questions. • I can explain that data can be grouped using chosen values. • I can group information using a database. • I can choose multiple criteria to answer a given question. • I can choose which field and value are required to answer a given question. • I can outline how 'AND' and 'OR' can be used to refine data selection. • I can explain the benefits of using a computer to create charts. • I can refine a chart by selecting a particular filter. • I can select an appropriate chart to visually compare data. • I can ask questions that will need more than one field to answer. • I can present my findings to a group. • I can refine a search in a real-world context. 	<p>database, data, information, record, field, sort, order, group, search, value, criteria, graph, chart, axis, compare, filter, presentation.</p>
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<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Summer 1</p>	<p>Creating media – Introduction to vector graphics</p>	<ul style="list-style-type: none"> • To identify that drawing tools can be used to produce different outcomes • To create a vector drawing by combining shapes • To use tools to achieve a desired effect • To recognise that vector drawings consist of layers • To group objects to make them easier to work with • To apply what I have learned about vector drawings 	<ul style="list-style-type: none"> • I can discuss how vector drawings are different from paper-based drawings. • I can experiment with the shape and line tools. • I can recognise that vector drawings are made using shapes • I can explain that each element added to a vector drawing is an object. • I can identify the shapes used to make a vector drawing. • I can move, resize, and rotate objects I have duplicated. • I can explain how alignment grids and resize handles can be used to improve consistency. • I can modify objects to create a new image. • I can use the zoom tool to help me add detail to my drawings. • I can change the order of layers in a vector drawing. • I can identify that each added object creates a new layer in the drawing. • I can use layering to create an image. • I can copy part of a drawing by duplicating several objects. • I can recognise when I need to group and ungroup objects. • I can reuse a group of objects to further develop my vector drawing. • I can compare vector drawings to freehand paint drawings. • I can create a vector drawing for a specific purpose. • I can reflect on the skills I have used and why I have used them. 	<p>vector, drawing tools, object, toolbar, vector drawing, move, resize, colour, rotate, duplicate/copy, zoom, select, align, modify, layers, order, copy, paste, group, ungroup, reuse, reflection.</p>
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<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Summer 2</p>	<p>Programming B – Selection in quizzes</p>	<ul style="list-style-type: none"> • To explain how selection is used in computer programs • To relate that a conditional statement connects a condition to an outcome • To explain how selection directs the flow of a program • To design a program which uses selection • To create a program which uses selection • To evaluate my program 	<ul style="list-style-type: none"> • I can identify conditions in a program. • I can modify a condition in a program. • I can recall how conditions are used in selection. • I can create a program with different outcomes using selection. • I can identify the condition and outcomes in an 'if... then... else...' statement. • I can use selection in an infinite loop to check a condition. • I can design the flow of a program which contains 'if... then... else...' • I can explain that program flow can branch according to a condition. • I can show that a condition can direct program flow in one of two ways. 	<p>Selection, condition, true, false, count-controlled loop, outcomes, conditional statement, algorithm, program, debug, question, answer, task, design, input,</p>
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		<ul style="list-style-type: none">• PROJECT EVOLVE	<ul style="list-style-type: none">• I can identify the outcome of user input in an algorithm.• I can outline a given task.• I can use a design format to outline my project• I can implement my algorithm to create the first section of my program.• I can share my program with others.• I can test my program.• I can extend my program further.• I can identify the setup code I need in my program.• I can identify ways the program could be improved.•	<p>implement, test, run, setup, operator.</p>
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Year 6

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Autumn 1</p>	<p>Computing systems and networks – Communication and collaborations</p>	<ul style="list-style-type: none"> • To explain the importance of internet addresses • To recognise how data is transferred across the internet • To explain how sharing information online can help people to work together • To evaluate different ways of working together online • To recognise how we communicate using technology – ONLINE SAFETY • To evaluate different methods of online communication – ONLINE SAFETY 	<ul style="list-style-type: none"> • I can describe how computers use addresses to access websites. • I can explain that internet devices have addresses. • I can recognise that data is transferred using agreed methods. • I can explain that all data transferred over the internet is in packets. • I can explain that data is transferred over networks in packets. • I can identify and explain the main parts of a data packet. • I can explain that the internet allows different media to be shared. • I can recognise how to access shared files stored online. • I can send information over the internet in different ways. • I can explain how the internet enables effective collaboration. • I can identify different ways of working together online. • I can recognise that working together on the internet can be public or private. • I can choose methods of communication to suit particular purposes. • I can explain the different ways in which people communicate. • I can identify that there are a variety of ways to communicate over the internet. • I can compare different methods of communicating on the internet. • I can decide when I should and should not share information online. • I can explain that communication on the internet may not be private. 	<p>communication, protocol, data, address, Internet Protocol (IP), Domain Name Server (DNS), packet, header, data payload, chat, explore, slide deck, reuse, remix, collaboration, internet, public, private, one-way, two-way, one-to-one, one-to-many.</p>
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<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Autumn 2</p>	<p>Creating media – Web page creation</p>	<ul style="list-style-type: none"> • To review an existing website and consider its structure • To plan the features of a web page • To consider the ownership and use of images (copyright) • To recognise the need to preview pages • To outline the need for a navigation path • To recognise the implications of linking to content owned by other people – ONLINE SAFETY 	<ul style="list-style-type: none"> • I can discuss the different types of media used on websites. • I can explore a website. • I know that websites are written in HTML. • I can draw a web page layout that suits my purpose. • I can recognise the common features of a web page. • I can suggest media to include on my page. • I can describe what is meant by the term 'fair use'. • I can find copyright-free images. • I can say why I should use copyright-free images. • I can add content to my own web page. • I can evaluate what my web page looks like on different devices and suggest/make edits. • I can preview what my web page looks like. • I can describe why navigation paths are useful. • I can explain what a navigation path is. • I can make multiple web pages and link them using hyperlinks. • I can create hyperlinks to link to other people's work. • I can evaluate the user experience of a website. • I can explain the implication of linking to content owned by others. 	<p>website, web page, browser, media, Hypertext Markup Language (HTML), logo, layout, header, media, purpose, copyright, fair use, home page, preview, evaluate, device, Google Sites, breadcrumb trail, navigation, hyperlink, subpage, evaluate, implication, external link, embed.</p>
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<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Spring 1</p>	<p>Programming A – Variables in games</p>	<ul style="list-style-type: none"> • To define a ‘variable’ as something that is changeable • To explain why a variable is used in a program • To choose how to improve a game by using variables • To design a project that builds on a given example • To use my design to create a project • To evaluate my project 	<ul style="list-style-type: none"> • I can explain that the way a variable changes can be defined. • I can identify examples of information that is variable. • I can identify that variables can hold numbers or letters. • I can explain that a variable has a name and a value. • I can identify a program variable as a placeholder in memory for a single value. • I can recognise that the value of a variable can be changed. • I can decide where in a program to change a variable. • I can make use of an event in a program to set a variable. • I can recognise that the value of a variable can be used by a program. • I can choose the artwork for my project. • I can create algorithms for my project. • I can explain my design choices. • I can choose a name that identifies the role of a variable. • I can create the artwork for my project. • I can test the code that I have written. • I can identify ways that my game could be improved. • I can share my game with others. • I can use variables to extend my game. 	<p>variable, change, name, value, set, design, event, algorithm, code, task, artwork, program, project, code, test, debug, improve, evaluate, share, assign, declare.</p>
	<ul style="list-style-type: none"> • SAFER INTERNET DAY lesson based on theme 			



<p>Spring 2</p>	<p>Data and information – Spreadsheets</p>	<ul style="list-style-type: none"> • To create a data set in a spreadsheet • To build a data set in a spreadsheet • To explain that formulas can be used to produce calculated data • To apply formulas to data • To create a spreadsheet to plan an event • To choose suitable ways to present data 	<ul style="list-style-type: none"> • I can collect data. • I can enter data into a spreadsheet. • I can suggest how to structure my data. • I can apply an appropriate format to a cell. • I can choose an appropriate format for a cell. • I can explain what an item of data is. • I can construct a formula in a spreadsheet. • I can explain which data types can be used in calculations. • I can identify that changing inputs changes outputs. • I can apply a formula to multiple cells by duplicating it. • I can calculate data using different operations. • I can create a formula which includes a range of cells. • I can apply a formula to calculate the data I need to answer questions. • I can explain why data should be organised. • I can use a spreadsheet to answer questions. • I can produce a chart. • I can suggest when to use a table or chart. • I can use a chart to show the answer to questions. 	<p>data, collecting, table, structure, spreadsheet, cell, cell reference, data item, format, formula, calculation, spreadsheet, input, output, operation, range, duplicate, sigma, propose, question, data set, organised, chart, evaluate, results, sum, comparison, software, tools.</p>
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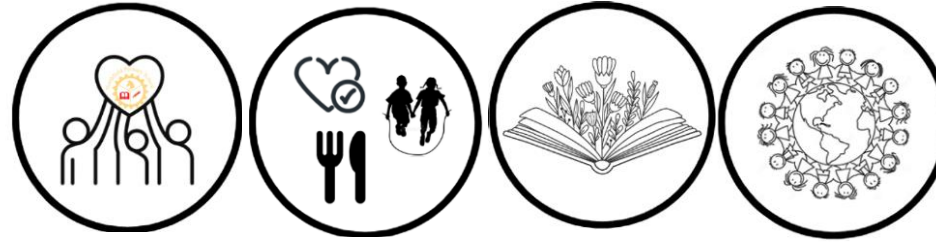
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Summer 1</p>	<p>Creating media – 3D Modelling</p>	<ul style="list-style-type: none"> • To recognise that you can work in three dimensions on a computer • To identify that digital 3D objects can be modified • To recognise that objects can be combined in a 3D model • To create a 3D model for a given purpose • To plan my own 3D model • To create my own digital 3D model 	<ul style="list-style-type: none"> • I can add 3D shapes to a project. • I can move 3D shapes relative to one another. • I can view 3D shapes from different perspectives. • I can lift/lower 3D objects. • I can recolour a 3D object. • I can resize an object in three dimensions. • I can duplicate 3D objects. • I can group 3D objects. • I can rotate objects in three dimensions. • I can accurately size 3D objects. • I can combine a number of 3D objects. • I can show that placeholders can create holes in 3D objects. • I can analyse a 3D model. • I can choose objects to use in a 3D model. • I can combine objects in a design. • I can construct a 3D model based on a design. • I can explain how my 3D model could be improved. • I can modify my 3D model to improve it. 	<p>TinkerCAD, 2D, 3D, shapes, select, move, perspective, view, handles, resize, lift, lower, recolour, rotate, duplicate, group, cylinder, cube, cuboid, sphere, cone, prism, pyramid, placeholder, hollow, choose, combine, construct, evaluate, modify.</p>
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Summer 2	Programming B – Sensing movement	<ul style="list-style-type: none"> • To create a program to run on a controllable device • To explain that selection can control the flow of a program • To update a variable with a user input • To use a conditional statement to compare a variable to a value • To design a project that uses inputs and outputs on a controllable device • To develop a program to use inputs and outputs on a controllable device 	<ul style="list-style-type: none"> • I can apply my knowledge of programming to a new environment. • I can test my program on an emulator. • I can transfer my program to a controllable device. • I can determine the flow of a program using selection. • I can identify examples of conditions in the real world. • I can use a variable in an if, then, else statement to select the flow of a program. • I can experiment with different physical inputs. • I can explain that checking a variable doesn't change its value. • I can use a condition to change a variable. • I can explain the importance of the order of conditions in else, if statements. • I can modify a program to achieve a different outcome. 	Micro:bit, MakeCode, input, process, output, flashing, USB, trace, selection, condition, if then else, variable, random, sensing, accelerometer, value, compass, direction, navigation, design,
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		<ul style="list-style-type: none"> PROJECT EVOLVE 	<ul style="list-style-type: none"> I can use an operand (e.g. <=>) in an if, then statement. I can decide what variables to include in a project. I can design the algorithm for my project. I can design the program flow for my project. I can create a program based on my design. I can test my program against my design. I can use a range of approaches to find and fix bugs. 	<p>task, algorithm, step counter, plan, create, code, test, debug.</p>
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Diversity in our computing curriculum

