Computing OVERVIEW			
Year R	**Autumn**	**Spring**	**Summer**
eSafety	Children learn about staying safe online, being safe out in the world and who to speak to if something upsets them ('safe adults').		
Enquiry question	What does that do?	How do we make it follow the path?	What will your robot do?
Key vocabulary	Keyboard, keys, buttons, display, numbers, tap, swipe, press.	first, next, then, forward, backward, left, right, on top, underneath, behind, inside.	Robots, programme, buttons, commands, photograph, camera
Learning objectives	• Explore technology e.g analogue phones, keyboards, clocks, weighing scales, etc. • Use i-pads to complete activities	• Give beebots instructions. • Learn key prepositional language. • Write instructions	• Design and make robots. • Explore cameras and take photographs
Ongoing objectives	• Exploring how everyday technology and digital devices work (such as iPads, digital cameras, and audio recorders). UTW • Using simple programmable toys (like Bee-Bots) to understand directional language and basic algorithms/instructions. UTW • Explaining and following rules, including basic online safety and responsible device handling. PSED • Demonstrating independence, confidence, and resilience when problem-solving. PSED • Refining small-motor and fine-motor control required to operate a mouse, tap or swipe a touchscreen, and press specific keyboard keys. PD • Create using a range of materials. EAD		

Computing Overview

Year 1	Autumn		Spring		Summer	
Topic title	**PROGRAMMING** **A: Moving a robot** *Writing short algorithms and programs for floor robots, and predicting program outcomes.*	**DATA & INFORMATION** **Grouping data** *Exploring object labels, then using them to sort and group objects by properties*	**Programming B - Programming animations** *Designing and programming the movement of a character on screen to tell stories.*	**Y2 - CREATING MEDIA** **A: Digital photography** *Capturing and changing digital photographs for different purposes.* ***Year 2 unit moved to Year 1 as this can be completed without a laptop***	**COMPUTING SYSTEMS & NETWORKS** *Technology around us* *Recognising technology in school and using it responsibly*	**CREATING MEDIA** **A: Digital painting** *Choosing appropriate tools in a program to create art, and making comparisons with working non-digitally.*
eSafety (Using Project Evolve)	Managing Online Information • I know / understand that we can encounter a range of things online including things we like and don't like as well as things which are real or make believe / a joke. I know how to get help from a trusted adult if we see content that makes us feel sad, uncomfortable, worried or frightened.	Privacy and Security • I can explain how passwords are used to protect information, accounts and devices. • I can recognise more detailed examples of information that is personal to someone (e.g where someone lives and goes to school, family names). I can explain why it is important to always ask a trusted adult before sharing any personal information online, belonging to myself or others.	Health, Well-being and Lifestyle • I can explain rules to keep myself safe when using technology both in and beyond the home. Online Relationships *Will also need to cover about online relationships (These can be covered in a regular PSHRE lesson and linked to the PSHRE objectives)* • I can explain why it is important to be considerate and kind to people online and to respect their choices. • I can explain why things one person finds funny or sad online may not always be seen in the same way by others. •	Online Bullying *All 3 objectives can be covered in a norm PSHRE lessons but will need an online specific lesson covering what to do with cyber bullying* Copyright *As part of this unit, aspects of the copyright objectives should be covered throughout the unit during the most appropriate lessons* • *I can recognise that content on the internet may belong to other people.* • *I can describe why other people's work belongs to them* •	Self-Image and Identity • If something happens that makes me feel sad, worried, uncomfortable or frightened I can give examples of when and how to speak to an adult I can trust and how they can help • I can recognise that there may be people online who could make someone feel sad, embarrassed or upset.	Online Bullying • *I can describe how to behave online in ways that do not upset others and can give examples.* Copyright *As part of this unit, aspects of the copyright objectives should be covered throughout the unit during the most appropriate lessons* • I understand that work created by others does not belong to me even if I save a copy • I can say why it belongs to me (e.g. 'I designed it' or 'I filmed it').
Enquiry question	How can I get the robot to go where I want it to go?	How can I group objects?	How can I animate sprites?	What makes a good photograph?	How can technology help us?	How can I use technology to create art?
Key vocabulary	Bee-Bot, forwards, backwards, turn, clear, go, commands, instructions,	object, label, group, search, image, property, colour, size, shape, value, data set, more,	ScratchJr, command, sprite, compare, programming, area, block, joining, start, run,	device, camera, photograph, capture, image, digital, landscape, portrait,	technology, computer, mouse, trackpad, keyboard, screen, double-click, typing.	paint program, tool, paintbrush, erase, fill, undo, shape tools, line tool, fill tool, undo tool,

Computing Overview						
Year 1	**Autumn**		**Spring**		**Summer**	
	directions, left, right, route, plan, algorithm, program.	less, most, fewest, least, the same	program, background, delete, reset, algorithm, predict, effect, change, value, instructions, design.	framing, subject, compose, light sources, flash, focus, background, editing, filter, format, framing, lighting		colour, brush style, brush size, pictures, painting, computers
Learning objectives	• 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	• To label objects • To identify that objects 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	• 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 the parts of a project • To use my algorithm to create a program	• 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	• 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	• 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 a computer on my own to paint a picture • To compare painting a picture on a computer and on paper

Computing Overview

Year 2	Autumn		Spring		Summer	
Topic title	**COMPUTING SYSTEMS & NETWORKS Information technology around us** *Identifying IT and how its responsible use improves our world in school and beyond.*	**PROGRAMMING A: Robot algorithms** *Creating and debugging programs, and using logical reasoning to make predictions.*	**CREATING MEDIA B: Making music** *Using a computer as a tool to explore rhythms and melodies, before creating a musical composition.*	**Y1 - CREATING MEDIA B: Digital writing** *Using a computer to create and format text, before comparing to writing non-digitally.* ***Year 1 Unit moved to Year 2 to allow children more time to familiarise themselves with laptops and the logging in process***	**DATA & INFORMATION Pictograms** *Collecting data in tally charts and using attributes to organize and present data on a computer.*	**PROGRAMMING B: Introduction to quizzes** *Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz*
eSafety (Using Project Evolve)	Self-Image and Identity • I can explain how other people may look and act differently online and offline. • I can give examples of issues online that might make someone feel sad, worried, uncomfortable or frightened; I can give examples of how they might get help.	Managing Online Information • I can explain the difference between things that are imaginary, 'made up' or 'make believe' and things that are 'true' or 'real' I can explain why some information I find online may not be real or true.	Online Reputation • I know who to talk to if something has been put online without consent or if it is incorrect. • I can explain how information put online about someone can last for a long time. Copyright *As part of this unit, aspects of the copyright objectives should be covered throughout the unit during the most appropriate lessons* • *I can recognise that content on the internet may belong to other people.* • *I can describe why other people's work belongs to them*	Online Reputation • I can describe what information I should not put online without asking a trusted adult first. • I can recognise that information can stay online and could be copied Copyright *As part of this unit, aspects of the copyright objectives should be covered throughout the unit during the most appropriate lessons* • I understand that work created by others does not belong to me even if I save a copy • I can say why it belongs to me (e.g. 'I designed it' or 'I filmed it').	Privacy and Security • *I can explain how passwords can be used to protect information, accounts and devices.* • *I can explain and give examples of what is meant by 'private' and 'keeping things private'.* • *I can describe and explain some rules for keeping personal information private (e.g. creating and protecting passwords).* •	Health, Well-being and Lifestyle • I can explain simple guidance for using technology in different environments and settings e.g. accessing online technologies in public places and the home environment. • I can say how those rules / guides can help anyone accessing online technologies Online Relationships *Will also need to cover about online relationships (These can be covered in a regular PSHRE lesson and linked to the PSHRE objectives)* • *I can explain why I have a right to say 'no' or 'I will have to ask someone'. I can explain who can help me if I feel under pressure to agree to something I am unsure about or don't want to do.* • *I can give examples of how someone might use technology to communicate*

Computing Overview						
Year 2	**Autumn**		**Spring**		**Summer**	
						with others they don't also know offline and explain why this might be risky. (e.g. email, online gaming, a pen-pal in another school / country). • *I can identify who can help me if something happens online without my consent.*
Enquiry question	What uses are there for technology in the world?	How can different algorithms have the same outcome?	How can I use technology to create music?	How can I create digital writing?	How can I use a computer to present information?	How can an algorithm become a quiz?
Key vocabulary	Information technology (IT), computer, barcode, scanner/scan	instruction, sequence, clear, unambiguous, algorithm, program, order, prediction, artwork, design, route, mat, debugging, decomposition	music, quiet, loud, feelings, emotions, pattern, rhythm, pulse, pitch, tempo, rhythm, notes, create, emotion, beat, instrument, open, edit	word processor, keyboard, keys, letters, type, numbers, space, backspace, text cursor, capital letters, toolbar, bold, italic, underline, mouse, select, font, undo, redo, format, compare, typing, writing.	more than, less than, most, least, common, popular, organise, data, object, tally chart, votes, total, pictogram, enter, data, compare, objects, count, explain, attribute, group, same, different, conclusion, block diagram, sharing	sequence, command, program, run, start, outcome, predict, blocks, design, actions, sprite, project, modify, change, algorithm, build, match, compare, debug, features, evaluate, decomposition, code
Learning Objectives	• 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	• 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 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	• To use a computer to write • To add and 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 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	• 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

Computing Overview						
Year 2	**Autumn**		**Spring**		**Summer**	
	• To recognise that choices are made when using information technology	• To design an algorithm • To create and debug a program that I have written		• To compare typing on a computer to writing on paper	described by attributes • To explain that we can present information using a computer	• To decide how my project can be improved

Computing Overview

Year 3	Autumn		Spring		Summer	
Topic title	**COMPUTING SYSTEMS & NETWORKS** **Information technology around us** *Identifying IT and how its responsible use improves our world in school and beyond.*	**CREATING MEDIA** **A: Stop-frame animation** *Capturing and editing digital still images to produce a stop-frame animation that tells a story.*	**PROGRAMMING** **A: Sequence in music** *Creating sequences in a block-based programming language to make music.*	**DATA & INFORMATION** **Branching databases** *Building and using branching databases to group objects using yes/no questions.*	**CREATING MEDIA** **B: Desktop publishing** *Creating documents by modifying text, images, and page layouts for a specified purpose.*	**PROGRAMMING** **B: Events and actions** *Writing algorithms and programs that use a range of events to trigger sequences of actions.*
eSafety (Using Project Evolve)	Self-Image and Identity • *I can explain how people can represent themselves in different ways online* • *I can explain ways in which someone might change their identity depending on what they are doing online (e.g. gaming; using an avatar; social media) and why.*	Online Bullying • I can describe appropriate ways to behave towards other people online and why this is important. • I can give examples of how bullying behaviour could appear online and how someone can get support. Copyright *As part of this unit, aspects of the copyright objectives should be covered throughout the unit during the most appropriate lessons* I can explain why copying someone else's work from the internet without permission isn't fair and can explain what problems this might cause.	Managing Online Information • I can describe and demonstrate how we can get help from a trusted adult if we see content that makes us feel sad, uncomfortable, worried or frightened. • I can explain that not all opinions shared may be accepted as true or fair by others (e.g. monsters under the bed). • I can explain the difference between a 'belief', an 'opinion' and a 'fact. and can give examples of how and where they might be shared online, e.g. in videos, memes, posts, news stories etc.	Privacy and Security • I can give reasons why someone should only share information with people they choose to and can trust. I can explain that if they are not sure or feel pressured then they should tell a trusted adult. • I can describe simple strategies for creating and keeping passwords private.	Online Reputation • *I can give examples of what anyone may or may not be willing to share about themselves online. I can explain the need to be careful before sharing anything personal.* • *I can explain who someone can ask if they are unsure about putting something online.* Copyright *As part of this unit, aspects of the copyright objectives should be covered throughout the unit during the most appropriate lessons* • *I can explain why copying someone else's work from the internet without permission isn't fair and can explain what problems this might cause.*	Health, Well-being and Lifestyle • I can explain why spending too much time using technology can sometimes have a negative impact on anyone; I can give some examples of both positive and negative activities where it is easy to spend a lot of time engaged • I can explain why some online activities have age restrictions, why it is important to follow them and know who I can talk to if others pressure me to watch or do something online that makes me feel uncomfortable (e.g. age restricted gaming or web sites). Online Relationships *Will also need to cover about online relationships (These can be covered in a regular PSHRE lesson and linked to the PSHRE objectives)* • I can explain why someone may change their mind about trusting anyone with something if they feel nervous, uncomfortable or worried. • I can explain what is meant by 'trusting someone online', why this is different from 'liking someone online', and why it is important to be careful about who to trust online

Computing Overview						
Year 3	**Autumn**		**Spring**		**Summer**	
						including what information and content they are trusted with. • I can explain how someone's feelings can be hurt by what is said or written online. • I can explain the importance of giving and gaining permission before sharing things online; how the principles of sharing online is the same as sharing offline e.g. sharing images and videos.
Enquiry question	How do computers communicate with each other?	How do photographs become animations?	How will order change my algorithm?	How can yes/no questions organise data?	Which tools are useful for crating different layout effects?	Which commands can help a character move through a maze?
Key vocabulary	digital device, input, process, output, program, digital, non-digital, connection, network, switch, server, wireless access point, cables, sockets	animation, flip book, stop-frame, frame, sequence, image, photograph, setting, character, events, onion skinning, consistency, evaluation, delete, media, import, transition	Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, motion, turn, point in direction, go to, glide, sequence, event, task, design, run the code, order, note, chord, algorithm, bug, debug, code	attribute, value, questions, table, objects, branching, database, objects, equal, even, separate, structure, compare, order, organise, selecting, information, decision tree	text, images, advantages, disadvantages, communicate, font, style, landscape, portrait, orientation, placeholder, template, layout, content, desktop publishing, copy, paste, purpose, benefits	motion, event, sprite, algorithm, logic, move, resize, extension block, pen up, set up, pen, design, action, debugging, errors, setup, code, test, debug, actions
Learning Objectives	• To explain how digital devices function • To identify input and output devices • To recognise how digital devices can change the way that we work • To explain how a computer network can be used to share information	• To explain that animation is a sequence of drawings or photographs • To relate animated movement with a sequence of images • To plan an animation • To identify the need to work consistently and carefully	• 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 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 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 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

Computing Overview						
Year 3	**Autumn**		**Spring**		**Summer**	
	• To explore how digital devices can be connected • To recognise the physical components of a network	• To review and improve an animation • To evaluate the impact of adding other media to an animation	• To change the appearance of my project • To create a project from a task description	• To plan the structure of a branching database • To independently create an identification tool	• To consider how different layouts can suit different purposes • To consider the benefits of desktop publishing	• To identify and fix bugs in a program • To design and create a maze-based challenge

Computing Overview

Year 4	Autumn		Spring		Summer	
Topic title	**COMPUTING SYSTEMS & NETWORKS** **The internet** *Recognising the internet as a network of networks including the WWW, and why we should evaluate online content.*	**CREATING MEDIA** **A: Audio editing** *Capturing and editing audio to produce a podcast, ensuring that copyright is considered.*	**PROGRAMMING** **A: Repetition in shapes** *Using a text-based programming language to explore count-controlled loops when drawing shapes.*	**DATA & INFORMATION** **Data logging** *Recognising how and why data is collected over time, before using data loggers to carry out an investigation* **(Learn Sheffield – alternative unit using Micro:Bits)**	**CREATING MEDIA** **B: Photo editing** *Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled.*	**PROGRAMMING** **B: Repetition in games** *Using a block-based programming language to explore count-controlled and infinite loops when creating a game.*
eSafety (Using Project Evolve)	Self-Image and Identity • *I can describe positive ways for someone to interact with others online and understand how this will positively impact on how others perceive them.* • *I can explain that others online can pretend to be someone else, including my friends, and can suggest reasons why they might do this.*	Online Bullying • I can explain why people need to think carefully about how content they post might affect others, their feelings and how it may affect how others feel about them (their reputation). • I can describe ways people can be bullied through a range of media (e.g. image, video, text, chat). • I can recognise when someone is upset, hurt or angry online. Copyright *As part of this unit, aspects of the copyright objectives should be covered throughout the unit during the most appropriate lessons* • *When searching on the internet for content to use, I can explain why I need to consider who owns it and whether I have the right to reuse it.* • *I can give some simple examples of content which I must not use without permission from the owner, e.g. videos, music, images.*	Managing Online Information • I can explain what is meant by fake news e.g. why some people will create stories or alter photographs and put them online to pretend something is true when it isn't. • I can explain why lots of people sharing the same opinions or beliefs online do not make those opinions or beliefs true. • I can analyse information to make a judgement about probable accuracy and I understand why it is important to make my own decisions regarding content and that my decisions are respected by others.	Privacy and Security • I can describe how some online services may seek consent to store information about me; I know how to respond appropriately and who I can ask if I am not sure. • I can explain that internet use is never fully private and is monitored, e.g. adult supervision. • I can describe strategies for keeping personal information private, depending on context.	Online Reputation *I can explain ways that some of the information about anyone online could have been created, copied or shared by others* Copyright *As part of this unit, aspects of the copyright objectives should be covered throughout the unit during the most appropriate lessons* • *When searching on the internet for content to use, I can explain why I need to consider who owns it and whether I have the right to reuse it.* • *I can give some simple examples of content which I must not use without permission from the owner, e.g. videos, music, images.*	Health, Well-being and Lifestyle • I can identify times or situations when someone may need to limit the amount of time they use technology e.g. I can suggest strategies to help with limiting this time. • I can explain how using technology can be a distraction from other things, in both a positive and negative way. Online Relationships *Will also need to cover about online relationships (These can be covered in a regular PSHRE lesson and linked to the PSHRE objectives)* • I can explain how content shared online may feel unimportant to one person but may be important to other people's thoughts feelings and beliefs. • I can give examples of how to be respectful to others online and describe how to recognise

Computing Overview						
Year 4	**Autumn**		**Spring**		**Summer**	
						healthy and unhealthy online behaviours. • I can describe strategies for safe and fun experiences in a range of online social environments (e.g. livestreaming, gaming platforms)
Enquiry question	Is the World Wide Web the same as the internet?	How can I create a podcast?	How can loops be used to make an algorithm more efficient?	How can it be beneficial to automate data collection?	How can photo editing be used artistically?	How can different types of loops be used when coding?
Key vocabulary	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	audio, microphone, speaker, headphones, input device, output device, sound, podcast, edit, trim, align, layer, import, record, playback, selection, load, save, export, MP3, evaluate, feedback	Logo (programming environment), program, turtle, commands, code snippet, algorithm, design, debug, pattern, repeat, repetition, count-controlled loop, value, trace, decompose, procedure	Data, Data logging, Information, Sensor, Input, Output, Time interval, Line graph, Table, Event	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	Scratch, programming, sprite, blocks, code, loop, repeat, value, infinite loop, count-controlled loop, costume, repetition, forever, animate, event block, duplicate, modify, design, algorithm, debug, refine, evaluate
Learning Objectives	• To describe how networks physically connect to other networks • To recognise how networked devices make up the internet • To outline how websites can be shared via the World Wide Web (WWW)	• 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 identify that accuracy in programming is important • To create a program in a text-based language • To explain what 'repeat' means	• To identify which data can be gathered over time • To identify different inputs and outputs on the MicroBit • To program the MicroBit to log and record input from one of its sensors	• 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 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

Computing Overview						
Year 4	**Autumn**		**Spring**		**Summer**	
	• To describe how content can be added and accessed on the World Wide Web (WWW) • To evaluate the consequences of unreliable content	• To apply audio editing skills independently • To combine audio to enhance my podcast project • To evaluate the effective use of audio	• 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	• Using program to record light levels • Programming MicroBit to use its other sensors • To interpret the data recorded	• To explain that images can be combined • To combine images for a purpose • To evaluate how changes can improve an image	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

Computing Overview

Year 5	Autumn		Spring		Summer	
Topic title	**COMPUTING SYSTEMS & NETWORKS** **Sharing information** *Identifying and exploring how information is shared between digital systems.*	**CREATING MEDIA** **A: Video editing** *Planning, capturing, and editing video to produce a short film.*	**PROGRAMMING** **A: Selection in physical computing** *Exploring conditions and selection using a programmable microcontroller.* ***(Learn Sheffield – Alternative unit using Micro:Bits)***	**DATA & INFORMATION** **Flat-file databases** *Using a database to order data and create charts to answer questions.*	**CREATING MEDIA** **B: Vector drawing** *Creating images in a drawing program by using layers and groups of objects.*	**PROGRAMMING** **B: Selection in games** *Exploring selection in programming to design and code an interactive quiz.*
eSafety (Using Project Evolve)	Self-Image and Identity • *I can demonstrate how to make responsible choices about having an online identity, depending on context.* • *I can explain how identity online can be copied, modified or altered.* Online Bullying • *I can describe how what one person perceives as playful joking and teasing (including 'banter') might be experienced by others as bullying.* • *I can recognise online bullying can be different to bullying in the physical world and can describe some of those differences.*	Online Bullying • *I can explain how anyone can get help if they are being bullied online and identify when to tell a trusted adult.* • *I can identify a range of ways to report concerns and access support both in school and at home about online bullying.* • *I can describe the helpline services which can help people experiencing bullying, and how to access them (e.g. Childline or The Mix).* • *I can explain how to block abusive users.* Copyright *As part of this unit, aspects of the copyright objectives should be covered throughout the unit during the most appropriate lessons* • I can give examples of content that is permitted to be reused and know how this content can be found online.	Managing Online Information • I can explain what is meant by the term 'stereotype', how 'stereotypes' are amplified and reinforced online, and why accepting 'stereotypes' may influence how people think about others. • I can describe how fake news may affect someone's emotions and behaviour, and explain why this may be harmful. • I can explain key concepts including: information, reviews, fact, opinion, belief, validity, reliability and evidence.	Privacy and Security • I can explain what a strong password is and demonstrate how to create one. • I can explain how many free apps or services may read and share private information (e.g. friends, contacts, likes, images, videos, voice, messages, geolocation) with others.	Online Reputation • *I can describe ways that information about anyone online can be used by others to make judgments about an individual and why these may be incorrect* Copyright *As part of this unit, aspects of the copyright objectives should be covered throughout the unit during the most appropriate lessons* • I can give examples of content that is permitted to be reused and know how this content can be found online.	Health, Well-being and Lifestyle • I recognise the benefits and risks of accessing information about health and well-being online and how we should balance this with talking to trusted adults and professionals. • I can explain how and why some apps and games may request or take payment for additional content (e.g. in-app purchases, lootboxes) and explain the importance of seeking permission from a trusted adult before purchasing. Online Relationships *Will also need to cover about online relationships (These can be covered in a regular PSHRE lesson and linked to the PSHRE objectives)* • I can explain that there are some people I communicate with online who may want to do me or my friends harm. I can recognise that this is not my / our fault.

Computing Overview						
Year 5	**Autumn**		**Spring**		**Summer**	
Enquiry question	How do search engine results be influenced?	How is editing a video different to shooting a video?	To can a MicroBit be programmed to produce different outputs?	How can results from a database be interpreted and presented?	How can shapes be combined to create a logo?	How can 'selection' be used to create an interactive quiz?
Key vocabulary	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	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	Algorithm, program, repetition, event, input, output, infinite loop, sensor, condition, action, selection, physical computer, flow, sequence, debugging, frame (in animation)	database, data, information, record, field, sort, order, group, search, value, criteria, graph, chart, axis, compare, filter, presentation	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	Selection, condition, true, false, count-controlled loop, outcomes, conditional statement, algorithm, program, debug, question, answer, task, design, input, implement, test, run, setup, operator
Learning objectives	• To explain that computers can be connected together to form systems • To recognise the role of computer systems in our lives • To identify how to use a search engine • 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	• To explain what makes a video effective • To use a digital device to 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	• To upload code to a physical computer • To create an animation using an infinite loop • To use different events to produce different results • To program and debug using selection • To use if, else if, else to program different outputs • To use the GRD pin as part of a selection output	• 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 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 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 that uses selection • To create a program that uses selection • To evaluate my program

Computing Overview						
Year 5	**Autumn**		**Spring**		**Summer**	
				• To use a real-world database to answer questions	• To apply what I have learned about vector drawings	

Computing Overview

Year 6	Autumn		Spring		Summer	
Topic title	**COMPUTING SYSTEMS & NETWORKS** **Internet Communication** *Recognising how the WWW can be used to communicate and be searched to find information.*	**CREATING MEDIA** **A: Web page creation** *Designing and creating webpages, giving consideration to copyright, aesthetics, and navigation.*	**PROGRAMMING** **A: Variables in games** *Exploring variables when designing and coding a game*	**DATA & INFORMATION** **Spreadsheets** *Answering questions by using spreadsheets to organise and calculate data.*	**CREATING MEDIA** **B: 3D modelling** *Planning, developing, and evaluating 3D computer models of physical objects*	**PROGRAMMING** **B: Sensing** *Designing and coding a project that captures inputs from a physical device.*
eSafety (Using Project Evolve)	Self-Image and Identity • *I can identify and critically evaluate online content relating to gender, race, religion, disability, culture and other groups, and explain why it is important to challenge and reject inappropriate representations online.* • *I can describe issues online that could make anyone feel sad, worried, uncomfortable or frightened. I know and can give examples of how to get help, both on and offline.* • *I can explain the importance of asking until I get the help needed.*	Online Bullying • I can explain how someone would report online bullying in different contexts. • I can describe how to capture bullying content as evidence (e.g screen-grab, URL, profile) to share with others who can help me. Copyright *As part of this unit, aspects of the copyright objectives should be covered throughout the unit during the most appropriate lessons* • I can demonstrate the use of search tools to find and access online content which can be reused by others. • I can demonstrate how to make references to and acknowledge sources I have used from the internet.	Managing Online Information • I can identify, flag and report inappropriate content. • I can explain how and why some people may present 'opinions' as 'facts'; why the popularity of an opinion or the personalities of those promoting it does not necessarily make it true, fair or perhaps even legal. • I can define the terms 'influence', 'manipulation' and 'persuasion' and explain how someone might encounter these online (e.g. advertising and 'ad targeting' and targeting for fake news).	Privacy and Security • I can describe ways in which some online content targets people to gain money or information illegally; I can describe strategies to help me identify such content (e.g. scams, phishing). • I can explain what to do if a password is shared, lost or stolen. • I can describe how and why people should keep their software and apps up to date, e.g. auto updates.	Online Reputation • I can explain strategies anyone can use to protect their 'digital personality' and online reputation, including degrees of anonymity. • I can explain the ways in which anyone can develop a positive online reputation. Copyright *As part of this unit, aspects of the copyright objectives should be covered throughout the unit during the most appropriate lessons* • I can demonstrate the use of search tools to find and access online content which can be reused by others. • I can demonstrate how to make references to and acknowledge sources I have used from the internet.	Health, Well-being and Lifestyle • I can assess and action different strategies to limit the impact of technology on health (e.g. night-shift mode, regular breaks, correct posture, sleep, diet and exercise). • I can describe common systems that regulate age-related content (e.g. PEGI, BBFC, parental warnings) and describe their purpose. • I recognise and can discuss the pressures that technology can place on someone and how / when they could manage this. Online Relationships *Will also need to cover about online relationships (These can be covered in a regular PSHRE lesson and linked to the PSHRE objectives)* • I can explain that taking or sharing inappropriate images of someone (e.g. embarrassing images), even if they say it is okay, may have an impact for the sharer and others; and who

Computing Overview						
Year 6	**Autumn**		**Spring**		**Summer**	
						can help if someone is worried about this. • I can describe how to be kind and show respect for others online including the importance of respecting boundaries regarding what is shared about them online and how to support them if others do not.
Enquiry question	How is data transferred over the internet?	How are websites created?	Why are variables used in games?	How can data be collected and presented?	How can 3D modelling help with designing buildings?	How can different inputs be used to change variables?
Key vocabulary	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	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	variable, change, name, value, set, design, event, algorithm, code, task, artwork, program, project, code, test, debug, improve, evaluate, share, assign, declare	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	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	Micro:bit, MakeCode, input, process, output, flashing, USB, trace, selection, condition, if then else, variable, random, sensing, accelerometer, value, compass, direction, navigation, design, task, algorithm, step counter, plan, create, code, test, debug
Learning objectives	• 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 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 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 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 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 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

Computing Overview						
Year 6	**Autumn**		**Spring**		**Summer**	
	• To recognise how we communicate using technology • To evaluate different methods of online communication	• To outline the need for a navigation path • To recognise the implications of linking to content owned by other people	• To design a project that builds on a given example • To use my design to create a project • To evaluate my project	• To create a spreadsheet to plan an event • To choose suitable ways to present data	• To create a 3D model for a given purpose • To plan my own 3D model • To create my own digital 3D model	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