

ACT Academy Trust Computing Knowledge and Skills Progression

Cycle A

	EYFS	Year 1/2	Year 3/4	Year 5/6
Autumn 1		Technology Around Us Knowledge - I know what technology is and how it helps us. - I know how to stay safe when using technology and who a trusted adult is. - I know the main parts of a computer and what they are used for. - I know that I need to turn on and log in to start using a computer. - I know that a mouse and keyboard help me control a computer and that keys do different jobs. - I know what the save icon means and why saving my work is important. Skills - I can find and recognise technology around me. - I can turn on a computer and log in. - I can use a mouse to click, drag, and open programs. - I can type letters and my name, and use delete and arrow keys to edit my work. - I can save my work and open it again later. - I can say rules for using technology safely and explain why they help us.	The Internet Knowledge - I can explain that the internet is a network of networks that connects devices all around the world. - I can explain how information is shared on the internet and name some services it provides, like websites, videos, and messages. - I can describe devices in a network and how they connect, and explain why networks need protecting. - I can explain that the World Wide Web is part of the internet, made up of websites and web pages that share different types of media. - I can explain where websites are stored and how people access them, and that people use online tools to create website content. - I can explain that websites are created by people, that there are rules to protect online content, and that not everything online is true or safe to share. Skills - I can show how networks connect devices and share information. - I can recognise different devices that are connected to a network. - I can explain how people access websites and explore the parts of a website. - I can use online tools and services to create or add my own content. - I can compare websites and explain who might own the content on them. - I can check if online information is reliable and understand how quickly untrue information can spread.	Repetition in Games Knowledge - I can explain that repetition is used in everyday tasks and in computer programs. - I can describe the difference between count-controlled loops and infinite loops. - I can explain how changing values inside a loop affects what happens in a program. - I can describe how more than one loop can run at the same time in Scratch. - I can explain how repetition is used to create animations and games, such as costume changes or continuous movement. - I can describe how designs and algorithms show repeated actions in a project. Skills - I can identify and use repetition in instructions, algorithms, and Scratch projects. - I can read and predict what a piece of code using loops will do. - I can modify loops to change or improve how a program works. - I can choose the correct type of loop for a specific task in my project. - I can design a project that includes repeated actions for different sprites. - I can build, test, debug, and improve a Scratch project that uses repetition.
Autumn 2		Digital Painting Knowledge - I can say what different paint tools do. - I know that freehand tools make different kinds of marks. - I know that shape tools make shapes like circles, squares, and lines. - I know that different colours and shapes can make art look different. - I know that artists use different styles.	Animation Knowledge - I can explain that animation is made from a sequence of images. - I can explain how a flip book or animation works. - I can explain why small changes are needed between frames. - I can describe the settings, characters, and events in my story.	Vector Drawing Knowledge - I can explain that vector drawings are made from shapes, lines, and objects. - I can describe how objects can be moved, resized, rotated, duplicated, and coloured. - I can explain how tools like zoom, grids, and resize handles help improve accuracy and detail.

		• I know that different tools are good for different jobs. • I know I can change brush size and colours. • I know pictures can be made on a computer or on paper. • I know that computer art and paper art can look different. Skills • I can make marks on a screen. • I can draw lines using different tools. • I can use shapes to make a picture. • I can choose colours and shapes carefully. • I can make art in the style of an artist. • I can choose the best tools for my picture. • I can explain which tools I used and why. • I can change brush size and colour. • I can make a picture on a computer by myself. • I can spot differences between computer paintings and paper paintings. • I can say which type of painting I prefer.	• I can describe an animation that is possible to make on screen. • I can explain why it is important to work carefully and consistently when animating. • I can explain how onion-skinning helps me improve my animation. • I can explain ways to make an animation better. • I can explain why I added extra media (music, text, sound) to my animation. • I can evaluate the quality and impact of my finished animation. Skills • I can draw a sequence of pictures. • I can create an effective flip-book style animation. • I can predict what an animation will look like. • I can create a stop-frame animation using a device. • I can break down a story into settings, characters, and events. • I can create a storyboard. • I can use onion-skinning to make small changes between frames. • I can review a sequence of frames to check my work. • I can evaluate and improve an animation. • I can give feedback on another learner's animation. • I can improve my own animation based on feedback. • I can add other media (text, music, sound) to my animation.	• I can describe how layers work and how changing their order affects a drawing. • I can explain why grouping and ungrouping objects makes drawings easier to manage. • I can describe the differences between vector drawings and freehand paint drawings. Skills Statements • I can use shape and line tools to create my own vector drawings. • I can select, move, resize, rotate, and duplicate objects to build an image. • I can add detail by zooming in and using grids and handles to improve consistency. • I can create and organise layers by moving objects forwards and backwards. • I can group and ungroup multiple objects to help me edit my drawing. • I can create a vector drawing for a specific purpose and reflect on the skills I used.
Spring 1		Knowledge • I know that data can be counted and compared. • I know what a tally chart is. • I know what a pictogram is. • I know that pictures can show information. • I know that objects and people can be sorted by attributes (e.g., colour, size, type). • I know that different charts show information in different ways. • I know that computers can help us make charts quickly. • I know that some information should not be shared. • I know I can say no if someone asks for information I don't want to share. Skills • I can record data in a tally chart.	Knowledge • I can identify the objects in a Scratch project (sprites and backdrops). • I can explain that objects in Scratch have attributes. • I can explain that commands in Scratch are represented as blocks. • I can explain that each sprite is controlled by the commands given to it. • I can explain that a program has a start. • I can explain that objects respond exactly to the code given. • I can explain what a sequence is. • I can explain that the order of commands can affect a sequence. • I can explain how sound commands can be combined.	Knowledge • I can explain that digital systems are made of parts that work together, using inputs, processes and outputs. • I can describe how computer systems connect and communicate with other devices. • I can explain how computer systems are used in everyday life and why keeping personal information safe is important. • I can describe how to use search engines and how web searches return information. • I can explain how search engines create an index using web crawlers. • I can describe how search engines rank and influence results, and understand their limitations. Skills • I can identify the parts and functions of a digital system.

		• I can count tallies and write the total. • I can compare totals using words like “more than” and “less than”. • I can enter data onto a computer. • I can make a pictogram using a computer. • I can explain what my pictogram shows. • I can sort objects by an attribute. • I can tally objects using a shared attribute. • I can answer questions such as “most”, “least”, “more than”, and “less than”. • I can choose an attribute to compare people. • I can collect the data I need. • I can create a pictogram and say what it tells me. • I can make a block diagram using a computer. • I can share what I found out from my data. • I can give simple reasons why information should not always be shared.	• I can explain that sprites can have different costumes and that backdrops change the stage appearance. • I can explain my design choices for my project artwork. • I can explain how to relate a task description to a design. Skills • I can identify sprites and backdrops in Scratch. • I can recognise and select coding blocks. • I can match coding blocks to their actions. • I can predict which blocks will move a sprite. • I can create a program following a design. • I can create movement for different sprites. • I can join blocks together to create a sequence. • I can start a program in different ways using event blocks. • I can combine sound commands. • I can order notes into a sequence. • I can build a sequence of commands that combine motion and sound. • I can choose and apply costumes and backdrops to change the appearance of my project. • I can decide the actions for each sprite. • I can identify and select the objects I need for a project. • I can use my design to create code in Scratch. • I can copy blocks of code from one sprite to another. • I can test my project to see if it performs as expected.	• I can explain and give examples of tasks managed by computer systems in real life. • I can search the web, refine my search terms, and compare search engine results. • I can recognise trustworthy websites and keep my personal information safe online. • I can explain how search engines organise, index, and rank results. • I can describe ways search results can be influenced and explain why the order of results matters.
Spring 2		Knowledge • I know that music can make us feel different emotions. • I know that pieces of music can sound different from each other. • I know some words (adjectives) to describe music. • I know that music is made by humans. • I know that music can have patterns and rhythms. • I know that pitch means how high or low a sound is. • I know that music is made from a sequence of notes. • I know that music can be played in different ways. • I know that different animals or ideas can inspire music. • I know that I can change and improve my musical work.	Knowledge • I can explain that yes/no questions can be used to split objects into groups. • I can explain that objects can be grouped using attributes. • I can identify the attributes needed to collect data about an object. • I can describe how a branching database works. • I can explain why a branching database needs to be tested. • I can explain why it is helpful for a database to be well structured. • I can explain that questions need to be ordered carefully to split objects into similarly sized groups. • I can explain that questions must allow each object to be uniquely identified. • I can explain the purpose of a branching database.	Knowledge • I can explain that a microcontroller is part of a system that controls outputs like lights and motors. • I can explain the difference between infinite loops, count-controlled loops, and conditional loops. • I can explain what a condition is and how it can control the flow of a program. • I can explain how selection ('if...then...') is used to make decisions in a program. • I can describe how inputs (like switches) can trigger actions in a physical system. • I can explain how algorithms describe what a physical project will do. Skills • I can connect components to a microcontroller to create a working circuit. • I can program LEDs, motors, and other outputs using loops.

		• I know I can describe how music makes me feel. Skills • I can identify simple differences between pieces of music. • I can describe music using adjectives. • I can say what I like or don't like about music. • I can create a rhythm pattern. • I can play a rhythm on an instrument. • I can connect images (like animals) with sounds. • I can use a computer to explore pitch. • I can link an idea to a piece of music. • I can create and improve musical patterns on a computer. • I can create a rhythm that represents an animal. • I can add notes to my rhythm to make a melody. • I can review my music. • I can explain how I changed or improved my music. • I can listen to music and talk about how it makes me feel.	• I can suggest real-world uses for branching databases. Skills • I can investigate and answer yes/no questions. • I can create my own yes/no questions about objects. • I can group objects by one attribute. • I can select attributes to separate objects into groups. • I can create subgroups of objects within a larger group. • I can arrange objects into a tree structure. • I can select objects to include in a branching database. • I can group objects using my own yes/no questions. • I can test a branching database to see if it works. • I can compare two branching database structures. • I can create well-ordered yes/no questions using given attributes. • I can independently create questions for a branching database. • I can create a physical version of a branching database. • I can create a digital branching database that reflects my plan. • I can work with a partner to test an identification tool.	• I can design and program conditional loops that respond to inputs. • I can use selection ('if...then...') to control what happens in my project. • I can create detailed designs and algorithms for a physical computing project. • I can test, debug, and improve my program to make my project work as intended.
Summer 1		Knowledge • I know that a command tells a robot what to do. • I know that pressing different buttons makes different things happen. • I know that robots follow instructions in a clear and repeatable way. • I know that direction words (forwards, backwards, left, right) tell us how to move. • I know that a sequence is a set of commands in a chosen order. • I know that starting from the same place helps me predict what will happen. • I know that robots can turn as well as move. • I know that programs can have more than one solution. • I know that debugging means finding and fixing a mistake. • I know that I can plan what I want my program to do before I start. Skills • I can predict what a command will do.	Knowledge • I can explain that accuracy is important when typing commands. • I can explain the effect of changing a value in a command. • I can explain what an algorithm is and how it helps produce an outcome. • I can explain that code can be tested in a text-based language. • I can explain what 'repeat' means in programming. • I can identify patterns and repetition in sequences. • I can explain how a count-controlled loop works. • I can identify the effect of changing the number of repeats in a loop. • I can predict the outcome of a program that uses loops. • I can explain how decomposition breaks a task into smaller parts. • I can explain that a computer can repeatedly call a procedure.	Knowledge • I can explain what makes a good website and describe the common features of a web page. • I can explain that websites are made using HTML and include different types of media. • I can explain copyright, fair use, and why I must use images responsibly and respectfully online. • I can explain why webpages should be previewed on different devices to improve the user experience. • I can explain what a navigation path is and why clear navigation is important in a website. • I can explain the implications of linking to content owned by other people. Skills • I can explore and review existing websites to understand their structure. • I can plan and sketch a web page layout that meets a purpose. • I can find, choose, and use copyright-free media appropriately.

		• I can match a command to the action it creates. • I can run commands on a robot. • I can follow an instruction. • I can give directions using movement words. • I can compare forwards and backwards movements. • I can start a sequence from the same place each time. • I can predict what a sequence of commands will do. • I can use 'turn' and 'move' commands together. • I can build a sequence using up to four commands. • I can explain what I want my program to do. • I can choose the order of commands in a sequence. • I can debug my program when it doesn't work. • I can plan a route before programming it. • I can find more than one solution to a problem. • I can use two different programs to reach the same place.	• I can explain how my program meets the design and how it could be improved. Skills • I can program a computer by typing Logo commands. • I can create a code snippet for a specific purpose. • I can use a template to draw what I want my program to do. • I can write an algorithm to create a given shape or outcome. • I can test my algorithm in Logo and fix mistakes (debug). • I can identify repetition in everyday tasks. • I can use a count-controlled loop to produce an outcome (e.g., shapes). • I can modify loops by choosing which values to change. • I can trace code and predict the shape it will draw. • I can identify chunks of actions and use them to create procedures. • I can use and call procedures in my program. • I can design a program using count-controlled loops (e.g., wrapping paper). • I can write my program using my design. • I can debug my work to improve it.	• I can create and edit a web page, adding content and improving it after previewing. • I can create multiple web pages and link them together using hyperlinks. • I can evaluate the user experience of my website and someone else's.
Summer 2		Knowledge • I know where the home row keys are on the keyboard. • I know why the home row keys are important for typing. • I know which keys are on the bottom row. • I know which keys are on the top row. • I know which keys I should press with my left hand. • I know which keys I should press with my right hand. • I know what the space bar is used for. • I know that each finger has certain keys it should press. Skills • I can find the home row keys on a keyboard. • I can use the correct fingers to press home row keys. • I can find and press the bottom row keys using the correct fingers. • I can find and press the top row keys using the correct fingers. • I can use my left hand to press the keys on the left side of the keyboard.	Knowledge • I can explain the difference between text and images. • I can recognise that text and images can communicate messages clearly. • I can identify advantages and disadvantages of using text, images, and emojis. • I understand how to use emojis respectfully online. • I can explain that text can be changed to communicate more clearly. • I can explain what 'page orientation' means. • I can recognise placeholders and explain why they are important. • I can explain the purpose of a template. • I can explain the job of an editorial designer. • I can identify different page layouts. • I can match layouts to their purposes (e.g., letter, newspaper, magazine). • I can explain why desktop publishing might be helpful. • I can identify uses of desktop publishing in the real world. • I can compare work made using desktop publishing with work made by hand.	Knowledge • I can explain the difference between rule-based systems and data-driven systems, including how AI uses data to make decisions. • I can describe how AI systems use data that people share online, including images, text, and videos. • I can explain what generative AI is and describe the different types of media it can create. • I can explain why fairness, transparency, and accountability are important when AI systems use people's data or generate content. • I can explain the risks of misinformation online, especially when content may have been created by AI. • I can explain that AI is software, not a thinking or feeling human, and why this is important when using AI tools. Skills • I can identify data-driven AI systems in the world around me and reflect on the data I already share with them.

		• I can use my right hand to press the keys on the right side of the keyboard. • I can type using patterns and falling-word activities. • I can use the space bar when typing. • I can type more accurately by using finger placement correctly.	Skills • I can change font style, size, and colour for a purpose. • I can edit text using keys such as Return, Backspace, and Shift. • I can type age-appropriate punctuation marks. • I can create a template for a particular purpose. • I can choose the best locations for content on a page. • I can copy and paste text and images into my work. • I can add text and images to a desktop publishing project. • I can make changes to content after I've added it. • I can choose a suitable layout for a given purpose. • I can create a magazine cover using a template. • I can arrange content clearly using text, images, and layout tools.	• I can evaluate how the media I share online could be used by AI systems, and make safer choices about my data. • I can critically evaluate online content, including judging how likely it is to have been generated by AI. • I can use strategies to check information before sharing it, and know how to investigate and report misinformation. • I can choose appropriate AI tools to help with tasks, while continuing to use my own critical thinking. • I can explain my responsibilities when using AI tools and state my expectations of developers and platforms to keep users safe and informed.
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Cycle B

	EYFS	Year 1/2	Year 3/4	Year 5/6
Autumn 1		Knowledge • I can identify examples of computers. • I can describe some uses of computers. • I can identify that a computer is a part of information technology. • I can identify examples of information technology in school. • I can identify that some IT can be used in more than one way. • I can find examples of information technology beyond school (e.g., shops, home). • I can talk about the different places where information technology is found. • I can recognise common types of technology. • I can say why we use IT in different situations. • I can list different uses of information technology. • I can talk about rules for using information technology. • I can say how rules help to keep me safe when using IT. • I can explain that choices are made when using information technology. • I can explain that we sometimes need to use IT in different ways depending on the activity. Skills	Knowledge • I can explain that digital devices accept inputs. • I can explain that digital devices produce outputs. • I can explain what makes a secure password. • I can explain how inputs, processes, and outputs work together. • I can classify devices as input or output devices. • I can describe simple processes used by digital devices. • I can explain how I use digital devices for different activities. • I can explain similarities between digital and non-digital tools. • I can suggest differences between digital devices and non-digital tools. • I can explain that computers can be connected to share information. • I can explain how messages travel through multiple connections. • I can explain why we need a network switch. • I can explain the role of a switch, server, and wireless access point. • I can identify how devices in a network are physically connected. • I can identify the benefits of computer networks.	Knowledge • I can recall how conditions are used in selection in computer programs. • I can explain that a conditional statement links a condition to an outcome. • I can identify the condition and outcomes in an <i>if... then... else...</i> statement. • I can explain that program flow can branch depending on whether a condition is true or false. • I can explain how selection directs the flow of a program in one of two ways. • I can identify the setup code needed for a program that uses selection. Skills • I can identify and modify conditions in an existing program. • I can use selection in an infinite loop to repeatedly check a condition. • I can design the flow of a program that includes <i>if... then... else...</i> statements. • I can outline a task and use a design format to plan a program that uses selection. • I can implement my algorithm and test my program to check it works as intended.

		• I can sort examples of computers or IT by their use. • I can sort examples of information technology by where they are found. • I can demonstrate how different IT devices can work together. • I can use IT for different types of activities. • I can talk about the uses of information technology in school and beyond. • I can explain how information technology helps us. • I can identify the choices I make when using information technology. • I can explain my reasons for using (or not using) IT for a task.	Skills • I can follow a process. • I can classify input and output devices. • I can design a digital device that includes input, process, and output. • I can compare work created using digital and non-digital tools. • I can recognise different types of digital connections. • I can demonstrate how information is passed between connected devices. • I can identify devices that are part of a computer network. • I can locate networked devices in my environment.	• I can evaluate and improve my program by sharing it, identifying improvements, and extending it further.
Autumn 2		Knowledge • I can recognise devices that can take photographs. • I can talk about how to take a good photograph. • I can say why a photo might look better in portrait or landscape. • I can spot what is wrong with a photo. • I can explain how lighting affects a photo. • I can say why a picture might be unclear. • I can recognise that images can be changed or edited. • I can tell which photos are real and which have been changed. Skills • I can take a digital photo. • I can choose portrait or landscape when taking a photo. • I can improve a photo by retaking it. • I can use lighting to make a photo better. • I can experiment with light sources and focus. • I can use simple editing tools to change an image. • I can apply different photography skills to take my best photo.	Knowledge • I can explain that sound can be recorded. • I can identify input and output devices used for recording and playback. • I can explain that the person who records sound controls who can use it (ownership). • I can explain that audio recordings can be edited. • I can explain what a soundwave view shows and how it helps with trimming. • I can discuss what sounds can be added to a podcast to make it engaging. • I can explain how different sounds can be layered in a podcast. • I can explain why saving a project keeps all parts editable. • I can explain the difference between saving a project and exporting an audio file. • I can evaluate audio recordings and identify strengths and improvements. Skills • I can identify the input and output devices needed for audio recording. • I can use a computer to record audio. • I can re-record my voice to improve the quality. • I can use the soundwave view to trim unwanted parts. • I can combine voice recordings with sound effects. • I can save my audio project so it stays editable. • I can plan appropriate content for a podcast. • I can record content following my plan. • I can review and improve my recordings. • I can arrange and layer multiple sounds to create an effect. • I can export my podcast as a finished audio file. • I can evaluate my own and others' podcasts.	Knowledge • I can recognise that computers can be used to work in three dimensions. • I can explain that 3D objects have height, width, and depth. • I can recognise that 3D objects can be viewed from different perspectives. • I can identify that digital 3D objects can be changed and modified. • I can explain that 3D objects can be combined to make a model. • I can explain how a 3D model can be improved for a purpose. Skills • I can add, move, and rotate 3D shapes in a project. • I can resize, recolour, and lift or lower 3D objects. • I can duplicate and group 3D objects to build a model. • I can accurately size and combine 3D objects for a specific purpose. • I can plan a 3D model by analysing designs and choosing suitable objects. • I can create, modify, and improve my own 3D model based on feedback or ideas.

			I can choose appropriate edits to improve my work.	
Spring 1		Knowledge - I can recognise keys on a keyboard and say what they do. - I can identify letter, number, Space, Backspace, and Caps Lock keys. - I can explain how to add text on a computer. - I can explain how to remove text on a computer. - I can explain what bold, italic, and underline do. - I can explain that the look of text can be changed using the toolbar. - I can explain when it is useful to change how text looks. - I can explain why I used certain tools to change my writing. - I can explain the differences between typing and writing on paper. - I can say why I prefer typing or writing. Skills - I can open a word processor. - I can find keys on a keyboard. - I can type using letter, number, and Space keys. - I can use Backspace to remove text. - I can type capital letters using Caps Lock. - I can use bold, italic, and underline. - I can select text by double-clicking. - I can select text by clicking and dragging. - I can change the font of my writing. - I can make changes to text using the toolbar. - I can use Undo to remove changes. - I can make changes to writing on a computer to compare typing with handwriting.	Knowledge - I can explain that digital images can be changed in many ways (cropping, rotating, recolouring, cloning, combining). - I can explain how composition, colour, and cloning affect an image and how these choices change how people think and feel. - I can explain why someone might edit a photo and recognise when editing may be unethical. - I can explain how combining images can create new pictures for a purpose and how changes can improve an image. Skills - I can use editing tools such as rotate, crop, colour effects, cloning, selection, copy/paste, and text tools. - I can choose and apply suitable effects, colours, and images to create a purposeful, well-edited project. - I can create a combined image using parts of one or more images and explain my choices. - I can review, improve, and complete an edited image using feedback and criteria.	Knowledge - I can explain why internet addresses are important and how devices use them to find websites. - I can recognise that data is transferred using agreed rules and methods across networks. - I can explain that all data sent over the internet is broken into packets. - I can identify the main parts of a data packet and explain their purpose. - I can explain how the internet allows people to share information and work together. - I can explain that communication on the internet may be public or private and is not always secure. Skills - I can describe how computers use internet addresses to access websites. - I can access, send, and share information online using different tools and media. - I can identify different ways people work together online and how these support collaboration. - I can choose suitable methods of online communication for different purposes. - I can compare different online communication methods and explain their advantages and risks. - I can make safe choices online, including deciding what to share and reporting inappropriate content.
Spring 2		Knowledge - I can explain that a sequence is a set of instructions in order. - I can explain that instructions need to be clear and precise. - I can describe what happens when you change the order of instructions. - I can explain that the same instructions in a different order create different outcomes. - I can use logical reasoning to predict what a program will do. - I can explain the difference between my prediction and the actual outcome.	Knowledge - I can explain that data collected over time can be used to answer questions. - I can identify data that can be gathered over time and understand that sensors can record it automatically. - I can explain what sensors measure and how data loggers collect 'data points' at set intervals. - I can explain how computers help us view, sort, and analyse data in different ways. - I can propose questions that can be answered using logged data and identify what data is needed. - I can explain the benefits of using a data logger.	Knowledge - I can explain that programs can run on controllable devices as well as on computers and screens. - I can explain how selection (if, then, else) controls the flow of a program. - I can recognise conditions in everyday situations and relate them to programming. - I can explain how variables store values and how user input can change them. - I can explain how conditional statements compare variables to values using operators.

		• I can explain that programming projects can include code and artwork. • I can explain the choices I made when designing my mat. • I can explain what my algorithm is meant to achieve. • I can explain that a larger task can be broken into smaller part (decomposition). • I can explain that debugging means finding and fixing mistakes. Skills • I can follow instructions given by someone else. • I can create a clear sequence of instructions. • I can create different algorithms using the same instructions. • I can use an algorithm to program a sequence on a floor robot. • I can show the difference in outcomes between two sequences. • I can follow a program step by step. • I can identify routes on a mat I have created. • I can test my mat to make sure it works for a floor robot. • I can design an algorithm to meet a goal. • I can use my algorithm to create a program. • I can plan algorithms for different parts of a larger task. • I can test and debug each part of my program. • I can combine all the parts to make one full program.	Skills • I can choose a data set to answer a question and suggest questions that match the data. • I can use sensors and data loggers to collect data automatically. • I can recognise and describe the intervals used in data logging and talk about the data I have captured. • I can view, sort, and interpret data using digital tools. • I can plan how to collect data using a data logger and carry out the data-logging process. • I can use collected data to draw conclusions and answer my chosen question.	• I can explain why testing and debugging are important when developing programs for devices. Skills • I can create and test a program in a new programming environment, using an emulator and a physical device. • I can use variables and conditions in if, then, else statements to control program flow. • I can update variables using user or physical inputs and experiment with different inputs. • I can use comparison operators (e.g. =, <, >) and modify conditions to change program outcomes. • I can design an algorithm and program flow that uses inputs and outputs on a controllable device. • I can develop, test, and debug a program using different strategies to fix errors.
Summer 1		Knowledge • I can compare different programming tools (e.g., Bee-Bot and ScratchJr). • I can explain that commands tell a sprite what to do. • I can explain that blocks can be joined together to make a sequence. • I can explain that a Start block runs a program. • I can say what happens when I change a value in a block. • I can explain that each sprite has its own set of instructions. • I can explain my choices when selecting backgrounds and sprites. • I can explain how I want each sprite to move. • I can explain what my algorithm should achieve. Skills • I can find the commands to move a sprite. • I can use commands to move a sprite. • I can join blocks together to create a sequence. • I can use a Start block in a program. • I can run my program.	Knowledge • I can explain the difference between count-controlled loops and infinite loops, and when each should be used. • I can explain that some programming languages allow more than one process to run at the same time. • I can explain what part of an instruction or code snippet is repeated and what outcome the repeated action should produce. • I can explain the effect of changes I make to a loop, a code snippet, or a repeated sequence. • I can evaluate the use of repetition in my own work and in example projects. Skills • I can list everyday tasks as instructions that include repetition, predict outcomes of code, and modify snippets to create a given result. • I can create, modify, and choose between count-controlled and infinite loops to produce specific outcomes.	Knowledge • I can explain what data is and what an item of data means in a spreadsheet. • I can explain why data needs to be organised clearly in rows and columns. • I can explain that cells can have different formats (e.g. number, text, currency). • I can explain that formulas are used to calculate data automatically. • I can explain that changing input data changes the output of a formula. • I can explain different ways to present data, including tables and charts. Skills • I can collect, structure, and enter data into a spreadsheet. • I can choose and apply the correct format to cells for the data being used. • I can create formulas using different operations, including adding and subtracting. • I can use formulas with ranges of cells and duplicate them to speed up calculations.

		• I can find blocks that have numbers and change their values. • I can add and delete sprites. • I can add blocks to give instructions to each sprite. • I can choose appropriate artwork for my project. • I can create an algorithm for each sprite. • I can use my design to build a project in ScratchJr. • I can add programming blocks based on my algorithm. • I can test the programs I have created to see if they work.	• I can design and build animations and games that use two or more loops running at the same time. • I can re-use and adapt existing code, refine algorithms, follow my design to build a program, and evaluate the steps I followed.	• I can use a spreadsheet to answer questions, including planning an event. • I can create and use charts to present data and decide when a chart or table is best.
Summer 2		Knowledge • I know where the home row keys are on the keyboard. • I know why the home row keys are important for typing. • I know which keys are on the bottom row. • I know which keys are on the top row. • I know which keys I should press with my left hand. • I know which keys I should press with my right hand. • I know what the space bar is used for. • I know that each finger has certain keys it should press. Skills • I can find the home row keys on a keyboard. • I can use the correct fingers to press home row keys. • I can find and press the bottom row keys using the correct fingers. • I can find and press the top row keys using the correct fingers. • I can use my left hand to press the keys on the left side of the keyboard. • I can use my right hand to press the keys on the right side of the keyboard. • I can type using patterns and falling-word activities. • I can use the space bar when typing. • I can type more accurately by using finger placement correctly.		Knowledge • I can explain the difference between rule-based systems and data-driven systems, including how AI uses data to make decisions. • I can describe how AI systems use data that people share online, including images, text, and videos. • I can explain what generative AI is and describe the different types of media it can create. • I can explain why fairness, transparency, and accountability are important when AI systems use people's data or generate content. • I can explain the risks of misinformation online, especially when content may have been created by AI. • I can explain that AI is software, not a thinking or feeling human, and why this is important when using AI tools. Skills • I can identify data-driven AI systems in the world around me and reflect on the data I already share with them. • I can evaluate how the media I share online could be used by AI systems, and make safer choices about my data. • I can critically evaluate online content, including judging how likely it is to have been generated by AI. • I can use strategies to check information before sharing it, and know how to investigate and report misinformation. • I can choose appropriate AI tools to help with tasks, while continuing to use my own critical thinking. • I can explain my responsibilities when using AI tools and state my expectations of developers and platforms to keep users safe and informed.