

Cycle A

Year 1

Autumn 1 Information Technology: Computing Systems and Networks- technology around us	Autumn 2 Computer Science: Moving a robot	Spring 1 Information Technology: Keyboard skills	Spring 2 Information Technology: Digital Art using Paint 3D	Summer 1 Information Technology: Data and information- grouping data	Summer 2 Computer Science: Turn a travelling algorithm into a travelling program (Scratch Jr)
Children will know by the end of this unit: • Examples of technology and explain how they can help us • That a computer is an example of technology • What a keyboard is for • Know that a	Children will know by the end of this unit: • What a given command does • Predicting the outcome of a sequence involving up to four commands • How to match a command to an outcome • That a program is a	Children will know by the end of this unit: • How to find the letters of their name on the keyboard to logon • How to log off a windows computer • To use the space bar for gaps in words	Children will know by the end of this unit: • How to draw a line using the oil brush tool • How to overlap lines by drawing slowly • How to change the thickness of lines	Children will know by the end of this unit: • How objects have been grouped • Know that labels are used to identify a group with similar characteristics • How to group the same objects in more than one way	Children will know by the end of this unit: • That programming is an algorithm turned into code • That an algorithm is a step by step sequence of instructions to make something happen

Computing Knowledge Progression Grid

computer stores work in files • Rules to keep them safe and healthy when they are using technology in and beyond the home	set of commands that a computer can run Know that a series of instructions can be issued before they are enacted	• How to turn on capital letters • How to use the delete key • How to use the backspace key • How to use the undo key to set things back where they were • How to use the return/enter key to start a new line • How to name and save a document with a name referencing what it is about	• How to draw a line using the spray tool • How to fill a space with colour using the bucket tool • How to erase carefully using the rubber tool • How to change the size of the rubber tool • How to choose, position, rotate and stamp a 2D shape	• How to count how many objects are in group and identify which has more • How to record how many objects are in a group • How to group objects to answer a question • How to compare objects to group them explaining what has been found	• How to create a new project on Scratch Jr • What blocks do in Scratch Jr • How to turn symbol algorithms into code blocks • How to video a travel sequence
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Cycle A					
Year 2					
Autumn 1 Digital Literacy: Computing Systems and Networks- IT around us	Autumn 2 Computer Science: Robot Algorithms	Spring 1 Information Technology: Digital Devices	Spring 2 Information Technology: Creating Media- Digital Photography	Summer 1 Information Technology: Data and information- Presenting data as pictograms	Summer 2 Computer Science: Create a game with moving sprites (Scratch Jr)
Children will know by the end of this unit: • How to recognise different types of computers used in school • Some uses of computers • That a computer is a part of IT • Examples of IT • That some IT can be used in more than one way	Children will know by the end of this unit: • How to follow sequences of instructions including moving forwards and backwards, and turning left and right. • How to plan a series of instructions	Children will know by the end of this unit: • That digital devices come in all shapes and sizes • That digital devices contain coded instructions to make it do things • That computers are one form of digital device • The difference between digital and non-digital toys	Children will know by the end of this unit: • Some aspects of taking a good photograph • Know that a photo can be portrait or landscape • How to take a photograph using a simple camera or device that has been set up in camera mode	Children will know by the end of this unit: • How to record and compare data in a tally chart • That objects can be represented as pictures • How to enter data onto a computer • How to view data on a computer in different formats • How to use a tally chart to create a	Children will know by the end of this unit: • Knows how to add, position, and delete sprites, as well as select and edit backgrounds to set a scene. • Understands that a green flag block acts as a "start" command to run multiple scripts at the same time. • Knows how to use a touch block so a sprite

Computing Knowledge Progression Grid

• Some uses of information technology • Why we use IT • Rules for how to keep safe when using IT • The need to use IT in different ways	for someone else to follow • How to plan a mat layout with several possible routes • How to plan and execute a program to reach a goal and debug as needed	• The key parts of a computer	• Some of the reasons why a photograph may be good or bad • To identify a photo that has been enhanced using tools when asked questions • How to use different tools to change how a photograph looks	pictogram • How to tally objects using a common attribute • How to create a pictogram by organising objects through a common attribute • How to use a computer program to present information in different ways • Why information should not be shared	reacts (moves or stops) when a user taps it. • Understands that the "when sprites touch" block can trigger an action, such as transitioning to a new scene. • Understands the importance of naming and saving digital work early to prevent loss. • Understands that a red repeat/end block creates a continuous loop, causing code to run over and over without restarting.
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Cycle A					
Year 3/4					
Autumn 1 Computer Systems and Networks: Connecting Computers	Autumn 2 Information Technology: Creating Media- Stop Frame Animation	Spring 1 Computer Science: Sequencing in Scratch	Spring 2 Information Technology: Branching databases	Summer 1 Information Technology: Presentation Media (Using Microsoft Powerpoint)	Summer 2 Computer Science: Ladybug Munch- Completing the application of simple sequences and timed sequences to complete the task Ladybug Munch.
Children will know by the end of this unit: • That digital devices accept inputs and produce outputs • What makes a secure password • The difference between input and output devices	Children will know by the end of this unit: • How an animation/flipbook works • What stop animation is and how it is created • Why small changes are needed for each	Children will know by the end of this unit: • That a sequence is a set of instructions followed in a strict order from top to bottom • That changing the order of blocks changes what happens (like changing	Children will know by the end of this unit: • That "attributes" are things you can see or measure to describe an object (like its colour, shape, or number of legs) • How to use an attribute to separate a big	Children will know by the end of this unit: • The uses of PowerPoint. • How to create a page in a presentation • How to add media to a presentation.	Children will know by the end of this unit: • Identify an everyday output in everyday life and in code. • Which blocks are used programme a character to move around the screen using the space bar and

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• How to use digital devices for different activities • The similarities between using digital devices and using non-digital tools • Differences between using digital devices and using non-digital tools • How messages are passed through multiple connections • Why we need a network switch • That a computer network is made up of a number of devices • How information can be passed between devices • The role of a switch, server,	frame of a stop frame animation • What 'onion skinning is' • Why you might add other media to an animation	the notes in a tune). • That different sprites (characters or objects) need their own separate instructions to work. • That computers aren't alive and will only do exactly what I tell them to do in code. • To point out the stage, the sprite area, and where to find the coding blocks. • How to make things happen by clicking the green flag or by pressing keys on my keyboard. • How to snap sound blocks and movement blocks	pile of objects into two smaller groups. • That a good sorting question must only have a "yes" or a "no" answer, with no choices in between. • That they need to think about the order of their questions so that they split their groups into even halves, making the database faster to use. • How to use an online database tool to organize pictures or objects using their own yes/no questions.	• How to add animations to a presentation. • How to apply a transition so that slides change from one slide to another in a more interesting way • How to add a video to a slide • How to add a sound clip to a slide	arrows to change its direction. • How to programme objects to 'wait' to disappear until the character touches them. • How to change the costume of a sprite
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and wireless access point in a network • The benefits of computer networks		together to make a character play music and move at the same time. • How to use code blocks to change a sprite's costume or swap the background on the stage.			
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Cycle A					
Year 5/6					
Autumn 1 Information Technology: Networks, Internet and Web Searching	Autumn 2 Computer Science: Making Choices- Ocean Pollution	Spring 1 Information Technology: Video Production	Spring 2 Information Technology: Green Screening	Summer 1 Information Technology: Data and Information: Flat File Databases	Summer 2 Computer Science: Conditions start actions in a loop- Butterfly fun
Children will know by the end of this unit: • Recognizes that a local network connects digital devices together (via cables or Wi-Fi) so they can share files, data, and hardware like printers. • Understands that the Internet is the physical network of connected computers spanning the globe, while the	Children will know by the end of this unit: • To use 'if' selection blocks to ask a question • To use 'if, else' selection blocks to create a two-answer question • To make small modifications to sprites to change how the sprite responds to questions.	Children will know by the end of this unit: • Can sketch out video ideas on paper first, planning different camera angles and shots before capturing any footage. • Knows how to hold a camera still, keep a subject in frame, and	Children will know by the end of this unit: • How to take a photo, making sure the entire background consists of a green screen. • How to take a video, ensuring the entire background consists of a green screen. • How to use a tripod carefully.	Children will know by the end of this unit: • That a flat-file database organizes information about a single topic into a single table made of rows and columns. • That a field is a single category of information (a column, like "Age") and a record is all the data collected	Children will know by the end of this unit: • That a computer can be programmed to repeat an action continuously <i>until</i> or <i>while</i> a specific condition is met. • The difference between a loop (repeating an action) and a conditional statement (making a choice based on a rule).

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World Wide Web is a service that runs <i>on</i> the internet to share web pages. • Understands that search engines use automated software programs (often called "spiders" or "crawlers") to constantly follow links and map out millions of web pages. • Knows that search engines store a copy of these web pages in a massive digital index, which functions like a giant book index for the whole internet. • Recognizes that search engines do not look at the live internet	• To de-bug my programming individually	account for lighting and sound quality while recording. • Understands that video editing software uses a digital timeline to arrange video clips in a specific chronological sequence. • Knows how to cut out mistakes or remove unwanted footage from the beginning, middle, or end of a recorded clip. • Can insert transitions to blend clips	• How to start a new green screen project. • How to import media into a green screen program, placing one layer as the background and one as the foreground. • How to edit a green screen project by trimming media and adjusting video volume. • How to plan a green screen sequence using a storyboard. • Where green screen technology has been used.	about one specific item (a row, like a single person's details). • That information in fields must be categorized by specific data types, such as text, numbers, dates, or yes/no options. • How to search a database using comparison operators (such as <i>equals</i>, <i>greater than</i>, <i>less than</i>, or <i>contains</i>) to filter out unwanted data. • How to turn filtered database results into graphs or charts (like bar charts or pie charts) to make patterns	• Understands how a condition can sit inside a loop, meaning the computer constantly checks if a rule is true every single time the loop repeats. • Knows how to use sensing blocks (such as a sprite touching a color, a variable reaching a number, or a key being pressed) as the condition to trigger an action. • Can use code blocks to stop a specific loop or halt the entire program once a condition is successfully met (e.g., a "game over" trigger).
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Computing Knowledge Progression Grid

when a user searches; instead, they use complex algorithms to instantly scan their index and rank results based on keyword matches, popularity, and trust.		together smoothly, using them only when they improve the narrative flow.		easier to see and explain. • The benefits of using a digital database over paper records when managing, searching, and sorting huge amounts of information.	
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Cycle B

Year 1

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Computing Knowledge Progression Grid

computer stores work in files • Rules to keep them safe and healthy when they are using technology in and beyond the home	set of commands that a computer can run Know that a series of instructions can be issued before they are enacted	• How to turn on capital letters • How to use the delete key • How to use the backspace key • How to use the undo key to set things back where they were • How to use the return/enter key to start a new line • How to name and save a document with a name referencing what it is about	• How to draw a line using the spray tool • How to fill a space with colour using the bucket tool • How to erase carefully using the rubber tool • How to change the size of the rubber tool • How to choose, position, rotate and stamp a 2D shape	• How to count how many objects are in group and identify which has more • How to record how many objects are in a group • How to group objects to answer a question • How to compare objects to group them explaining what has been found	• How to create a new project on Scratch Jr • What blocks do in Scratch Jr • How to turn symbol algorithms into code blocks • How to video a travel sequence
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Cycle B					
Year 2					
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Cycle B					
Year 3/4					
Autumn 1 Information Technology: Word Processing	Autumn 2 Computer Science: Toy Give Away- Exploring Count Controlled Loops	Spring 1 Information Technology: Desktop Publishing	Spring 2 Information Technology: Data Logging (Teach computing)	Summer 1 Computer Science: Fish Tank-Exploring Indefinite Loops	Summer 2 Computer Science: Helicopter game Completing an application of count controlled and indefinite loops within the Helicopter Game on Scratch.
Children will know by the end of this unit: • Knows how to change letters from lowercase to capitals by holding down the shift key or using caps lock. • Knows that holding down the shift key lets them type symbols hidden on the	Children will know by the end of this unit: • How to act out and define what a count-controlled loop is. • How to recognise a count-controlled loop. • How to make small modifications to sprites to change	Children will know by the end of this unit: • Knows whether a page should be landscape (wide) or portrait (tall) to best fit the project. • Knows how to arrange text and images neatly so the page looks balanced and is easy to read.	Children will know by the end of this unit: • Understands that computers can use special input tools called sensors to measure things in the real world (like temperature, light, and sound), just like	Children will know by the end of this unit: • Understands that an "indefinite loop" keeps an action repeating over and over until something special happens to stop it. • Knows the difference	Children will know by the end of this unit: • The difference between a count-controlled loop and a continuous loop. • How to make small modifications to sprites to change the speed they are travelling.

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tops of keys (like speech marks or punctuation). • Knows how to use the backspace key to erase backwards and the delete key to erase forwards. • Understands that the "undo" and "redo" buttons are quick ways to fix a mistake or bring back work they accidentally deleted • How to change text size, font and colour • How to change text to bold, italics or to underline it • How to highlight text • How to use bullet points • How to use the spell checker	the speed they are travelling. • How to plan an effective game and create count-controlled loops for a sprite. • How to de-bug with a partner effectively	• Can type inside text boxes and change the font style, size, and colour to make headers pop out from body text. • Knows how to add pictures, resize them, and crop out unwanted edges to make them fit the page perfectly. • Understands that text and pictures can sit on top of each other, and knows how to use "bring to front" or "send to back" buttons to arrange them.	humans use their senses. • Knows that a data logger is a digital device that can automatically collect and store measurements over a period of time. • Understands that data loggers are helpful because they can take measurements automatically, even when people are not there or when it is too dangerous for a human to stay. • Knows that a data logger can be set to take measurements at regular time gaps, such as	between a loop that counts (like "repeat 5 times") and an indefinite loop (like "repeat until a button is pressed"). • Knows how to use a condition block (like "until touching edge") to give a repeating loop a clear way to finish. • Can read a simple loop script and predict exactly what a sprite will do before pressing the start button. • Can spot a "stuck loop" bug (where the program loops forever because the stop condition is	• How to plan an effective game and create forever loops for multiple sprites. • How to de-bug with a partner effectively.
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Computing Knowledge Progression Grid

• How to use cut, copy and paste to move text round a document • How to align text • Understands the importance of using "save" and "save as" to keep their work safe while they are typing.			every ten seconds, every hour, or every day. • Recognizes that each individual measurement collected by the data logger is called a "data point," and a group of them together makes a "data set."	impossible to reach) and knows how to fix it.	
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Cycle B					
Year 5/6					
Autumn 1 Information Technology: Web Page Creation	Autumn 2 Computer Science: Simple Procedures	Spring 1 Information Technology: Spreadsheets	Spring 2 Computer Science: Nested Loops	Summer 1 Computer Science: Creating an Algorithm Using Crumble	Summer 2 Computer Science: Variables- Variable Fun
Children will know by the end of this unit: • Understands that images and text found online belong to other people and knows how to check for permission or find copyright-free media. • Can organize headings, paragraphs, and images neatly onto a page so it	Children will know by the end of this unit: • Understands that a "procedure" is a custom code block created by the programmer to bundle together a list of regular instructions under one short name. • Knows that a procedure is useful for code that needs to be	Children will know by the end of this unit: • Knows that a spreadsheet is a giant grid made of columns (labelled with letters) and rows (labelled with numbers). • Understands how to read a cell address by matching its column letter and row number (like finding cell B4).	Children will know by the end of this unit: • Understands that a "nested loop" means putting an inner loop completely inside an outer loop, like a smaller box tucked inside a bigger box. • Knows that every single time the outer loop runs once, the inner loop must complete all of	Children will know by the end of this unit: • Knows how to use crocodile clips to hook up a Crumble controller board to an external battery pack and individual LEDs without crossing wires. • Knows that the Crumble board is a mini-computer that sends an "output" signal (electricity)	Children will know by the end of this unit: • Understands what a variable does: Thinks of a variable like a digital whiteboard where the computer can write down a value, rub it out, and change it whenever it needs to. • Understands that a single variable can only store one piece of

Computing Knowledge Progression Grid

is clean, structured, and easy to read. • Knows how to add hyperlinks and navigation bars so visitors can jump seamlessly from page to page. • Understands that keeping fonts, colours, and layouts similar across all sub-pages makes a website feel professional. • Recognizes that a web page must be "published" onto a web server to make it visible to the rest of the world. • Can use a sitemap to map out a website's structure before building it,	used over and over again, saving them from writing the exact same blocks multiple times. • Understands that hiding long lists of code inside a simple procedure makes a program much smaller, easier to read, and simpler to fix. • Knows how to name and build a new procedure block • Understands that a procedure will not do anything until it is "called" or pulled into the main script. • Understands that a procedure should never try to start itself up	• Can click into a cell to type text labels, individual numbers, or mathematical formulas. • Knows that every formula or calculation <i>must</i> start with an equals sign (=) so the computer knows to do math instead of just writing words. • Knows how to write simple equations using cell references to add (+), subtract (-), multiply (*), or divide (/) numbers. • Can use shortcut functions like SUM to add a long column of numbers together easily, or AVERAGE to	its loops from start to finish. • Can spot repeating patterns in shapes, geometry, or animations that can be programmed much faster using nested loops instead of writing out long lines of code. • Knows how to drag a loop block inside another loop block in a coding program (like Scratch) to make complex actions happen • Understands how to calculate the correct angles and turns so that the nested shapes align perfectly	through its pins to light up the physical bulbs. • Understands that real-world hardware can sometimes have loose connections, showing a basic ability to test a wire or turn a bulb around if it does not light up. • Can use specific hardware code blocks to turn individual coloured lights high (on) or low (off). • Understands that the computer executes code faster than human eyes can track, using wait blocks to keep a specific light	information at a time, which can be a number or a string of words. • Knows how to name a variable clearly after the job it does so the code stays easy to understand. • Understands the importance of setting a variable to its starting number (like setting the score back to 0) as soon as the green flag is clicked so the game resets properly. • Knows that using the set block completely replaces the old value with a brand new one, while the change block builds on top of the old value (like
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Computing Knowledge Progression Grid

ensuring information is split logically across multiple pages.	from the inside, or the computer will get stuck in a never-ending loop	find the middle value of a set of data. - Knows how to change colours, add borders, and adjust fonts to make headers stand out and tables easy to read. Can select a table of numbers and turn it into a clear bar chart or pie chart to help others spot patterns instantly - Can change numbers inside a formula cell to see how the final answer automatically recalculates, using the spreadsheet to answer "what if?" questions.	into a complete design (e.g., using 360 degrees).	pattern glowing long enough for cars to react.	adding 1 point to the current score) Can put a variable block inside a loop to make things count up, count down, or keep track of time automatically.
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Computing Knowledge Progression Grid