IT Curriculum Map

Computer Science

FS	Y1	Y2
Programming (Spr 1) - Beebots/Purple Mash Coding • Know that we can give commands to a Beebot • Know how to use the buttons to make the Beebot move • Know how to follow instructions • Know how to program a simple sequence	**Programming A - Moving a Robot (Aut 1)** • Know what a given command will do • Know how to act out a given word • Know how to combine forwards and backwards command to make a sequence • Know how to combine four direction commands to make sequences • Know how to plan a simple program • Know how to find more than one solution to a problem	**Programming A - Robot algorithms (Aut 1)** • Know how to describe a series of instructions as a sequence • Know how to explain what happens when we change the order of instructions • Know how to use logical reasoning to predict the outcomes of a program • Know how to explain tat programming projects have code and artwork • Know how to design an algorithm • Know how to create and debug a program that I have written
Programming (Sum 1) - Kodable • Know some directional language to move a sprite on screen • Know how to give a sequence of instructions	**Programming B - Programming animations (Sum 1)** • Know how to choose a command for a given purpose • Know that a series of commands can be joined together • Know how to identify the effect of changing a value • Know how to explain that each sprite has its own instructions • Know how to design the parts of a project • Know how to use my algorithm to create a program	**Programming B - Programming quizzes (Sum 1)** • Know how to explain that a sequence of commands has a start • Know how to explain that a sequence of commands has an outcome • Know how to create a program using a given design • Know how to change a given design • Know how to create a program using my own design • Decide how my project can be improved
Programming (Sum 2) - Scratch Junior • Know how to open the correct program • Know what change a sprite • Know how to move a character • Know that a sprite needs a command to move		

Y3	Y4	Y5	Y6
Programming A - Sequence in Music (Spr 2) • Know that commands in Scratch are represented in blocks • Know how to identify commands that have an outcome • Know how to explain that a program has a start • Know that a sequence of commands has an order • Know how to change the appearance of my project • Know how to create a project from a task description	**Programming A - Repetition in Shapes (Aut 1)** • Know how to identify that accuracy in programming is important • Know how to create a program in a text-based language • Know what 'repeat' means • Know how to modify a count-controlled loop to produce a given outcome • Know how to decompose a task into small steps • Know how to create a program that uses count-controlled loops to produce a given outcome	**Programming A - Selection in Physical Computing (Spr 1)** • Know how to control a simple circuit connected to a computer • Know how to write a program that includes count-controlled loops • Know that a loop can stop when a condition is met • Know that a loop can be used to repeatedly check hether a condition has been met • Know how to design a physical project that includes selection • Know how to create a controllable system that includes selection	**Programming A - Variables in Games (Spr 1)** • Know that a 'variable' is something changeable • Know why a variable is used in a program • Know how to improve a game by using variables • Know how to design a project that builds on a given example • Know how to use my design to create a project • Know how to evaluate my project by identifying ways it could be improved
Programming B - Events and actions (Sum 2) • Know how to explain how a sprite moves in an existing project • Know how to create a program to move a sprite in our directions • Know how to adapt a program to a new context • Know how to develop my program by adding features • Know how to identify and fix bugs in a program • Know how to design and create a maze-based challenge	**Programming B - Repetition in Games (Spr 2)** • Know how to use count-controlled loops in a different programming environment • Know that in programming there are infinite loops and count-controlled loops • Know how to develop a design that includes two or more loops which run at the same time. • Know how to modify an infinite loop in a given program • Know how to design and create a project that includes repetition	**Programming B - Selection in quizzes (Sum 1)** • Know how selection is used in computer programs • Know that a conditional statement connects a condition to an outcome • Know how selection directs the flow of a program • Know how to design a program which uses selection • Know how to create a quiz program which uses selection • Know how important it is to evaluate my program	**Programming B - Sensing (Sum 1)** • Know how to create a program to run on a controllable device • Know that selection can control the flow of a program • Know how to update a variable with a user input • Know how to use a conditional statement to compare a variable to a value • Know how to design and develop a project that uses inputs and outputs on a controllable device

Information Technology

FS	Y1	Y2
Creating media (Spr 2) - Puppet Pals • Know how to open the app 'Puppet Pals' • Know how to add audio to 'Puppet Pals' • Know how to create and record own story on 'Puppet Pals'	**Creating media - digital painting (Aut 2)** • Know what different freehand tools do • Know how to use the shape tool and the line tools • Know how to make careful choices when painting a digital picture • Know how to explain why I chose the tool that I used • Know how to use a computer on my own to paint a picture • Know the differences between creating a picture on a computer or on paper	**IT Around Us (Spr 1)** • Know the uses and features of information technology • Know how to identify information technology in the home • Know how to identify information technology beyond school • Know how information technology benefits us • Know how to use information technology safely • Know that choices are made when using information technology
	Grouping Data (Sum 2) • Know how to label objects • Know that objects can be counted • Know how to describe objects in different ways • Know how to count objects with same properties • Know how to compare groups of objects • Know how to answer questions about groups of objects	**Digital photography (Sum 2)** • Know how to use a digital device to take a photograph • Know how to make choices when taking a photograph • Know what makes a good photograph • Know how photographs can be improved • Know how to use tools to change an image • Know that photos can be changed

Y3	Y4	Y5	Y6
Creating Media - Desktop Publishing (Aut 2) • Know that text and images convey information • Kno that text and layout can be edited • Know how to choose appropriate page sections • Know how to add content to a desktop publishing publication • Know that different layouts can suit different purposes • Know and explain the benefits of desktop publishing	**Theme linked - 'Lightning Speed' (Computing Systems and Networks - The Internet) (Spr 1)** • Know how networks physically connect to other networks • Know how networked devices make up the internet • Know how websites can be shared via the World Wide Web • Know how content can be added and accessed on the World Wide Web • Know that the content of the WWW is created by people • Know how to evaluate the consequences of unreliable content	**Drawing - Designing a 3D Roman villa (Vector Drawing) (Aut 1)** • Know that drawing tools can be used to produce different outcomes • Know how to create a vector by combining shapes • Know how to use tools to achieve a desired effect • Know that vector drawings consist of layers • Know how to group objects to make them easier to work with • Know how to evaluate my drawings	**Introduction to Spreadsheets (Aut 1)** • Know how to identify questions which can be answered using data • Know that objects can be described using data • Know that formulas can be used to produce calculated data • Know how to apply formulas to data, including duplicating • Know how to create a spreadsheet to plan an event • Know how to choose suitable ways to present data
Creating Media - Animation (Spr 1) • Know that animation is a sequence of drawings or photographs • Know how to relate animated movement with a sequence of images • Know how to plan an animation • Know that it is important to work consistently and carefully • Know how to review and improve an animation • Know how to evaluate the impact of adding other media to an animation	**Creating Media - Audio Editing (Sum 2)** • Know that sound can be digitally recorded • Know how to use a digital device to record sound • Know that a digital recording is stored as a file • Know that audio can be changed through editing • Know that different types of audio can be combined and played together • Know how to evaluate editing choices made	**Flat-file databases (Spr 2)** • Know how to use a form to record information • Know how to compare paper and computer-based databases • Know how grouping and then sorting data allows us to answer questions • Know that tools can be used to select specific data • Know that computer programs can be used to compare data visually • Know how to apply knowledge of a database to ask and answer real-world questions	**3D Modelling - 3D printer work (Sum 2)** • Know how to use a computer to create and manipulate 3D digital objects • Know how to compare working digitally with 2D and 3D graphics • Know how to construct a digital 3D model of a physical object • Know that physical objects can be broken down into a collection of 3D shapes • Know how to design a digital model by combining 3D objects • Know how to develop and improve a digital 3D model

Digital Literacy

	FS (Aut 1, 2, Spr 2 and Sum 1)	Y1 (Spr 1 and Spr 2)	Y2 (Aut 2 and Spr 2)
Ipad Skills	• Know how to wake and lock an iPad • Know how to locate the home screen and navigate to an app • Know how to use the iPad to take a photograph	• Know how to select and app to use • Know how to navigate within an iPad app	• Know how to take an effective photo • Know how to carry out a keyword search for required information • Know what a browser is
Google Apps	**n/a**	• Know how to use Google Slides (in IT Suite) • Know how to access Google classroom	• Know how to use Google Docs • Know how to access Google Classroom with increasing independence (at least once a term)
Formatting tools	• Know that typing on the keyboard makes letters appear on screen • Know how to make a capital letter • Know how to make spaces between words using the space bar	• Know how to use the shape/line tool	• Begin to know how to change fonts/sizes/colours • Know how to resize a picture
Key Computer Operating Skills	• Know what the parts of a desktop computer are • Know how to wake the screen • Know how to manipulate a mouse • Know how to click on different buttons on screen to change colour or pen • Know how to use the mouse to click on options when playing simple online games	• Continue to develop a familiarity with a regular keyboard layout	• Know how to write full sentences using IT (Purple Mash)

	Y3 (Aut 1, Sum 1)	Y4 (Aut 2, Sum 1)	Y5 (Aut 2, Sum 2)	Y6 (Aut 2, Spr 2)
Ipad Skills	• Know how to log onto TTRS/Spelling Shed independently • Know how to switch between users on these apps • Know how to select own keywords for searching (not writing whole question)	• Know how to record a sound for playback or editing • Know a few of their own logins for learning apps (TTRS/EdShed/Nessy) • Know how to generate own keyword searches using minimal search terms	• Know how to create multimedia presentations using photos/videos etc • Know how to create basic video edits using an appropriate app	• Know how to effectively combine video, audio and images for broadcast
Google Apps	• Know how to use Google Docs to produce a piece of English/ theme work • Know how to create a new document in Slides/Docs • Know that work needs to have a 'save' title and that this can then be found in Google Drive	• Know how to retrieve files from Google Drive • Know how to use multiple slides in Google Slides to create a piece of work for theme/ English • Know their own Google User account	• Know how to login to Google Account and be able to select appropriate tools to produce work • Know how to share work with appropriate people • Know how to access a shared drive • Know how to 'hand in' homework in Google Classroom	• Know how to login to the Google Suite confidently and independently as required and appropriate to task • Know how to collaborate on documents being produced
Formatting tools	• Know how to change font sizes appropriately to match the task and create headings where needed • Know hot to search for and insert own images required for work	• Know the importance of layout for effective communication - including resizing/using text and shapes/ word art • Know how to order objects on a screen (layering shapes/text boxes/photos etc)	• Know how to combine text, images and video from different sources • Begin to make own effective choices about layout/font choices/colour scheme etc	• Know how to select and make effective choices to match the content/context desired
Key Computer Operating Skills	• Be able to write extended pieces using a keyboard using two fingers to type and thumbs on space • Know the positions of the punctuation on the keyboard, including the 'caps lock' • Know how to use the right click of a mouse to select options	• Have an awareness of copyright when researching and not copying and pasting chunks of text but instead putting things in 'their own words' • Begin to know how to use ctrl shortcuts (use school helpsheet)	• Know how to transfer images between ipads and computers using wire/direct app links • Secure the use of a greater range of keyboard/mouse shortcuts • Know how to use a greater range of fingers for typing	• Know how to produce pieces of work using the computer entirely independently • Know how to sustain work production for multiple page documents • Improve typing pace • Know the difference between working locally or online and explain this

Online Safety

Term/ Project Evolve Theme	FS	Y1	Y2	Y3	Y4	Y5	Y6
Autumn 1 Establishing / reinforcing school procedures and ICT expectations	SMART CATS (w/assembly) Discuss the charter and sign S = Stay Safe M = Don't Meet up A = Accepting Files R = Reliable? T = Tell someone C = Care A = Ask T = Tell S = Stay Safe	SMART CATS (w/assembly) Discuss the charter and sign S = Stay Safe M = Don't Meet up A = Accepting Files R = Reliable? T = Tell someone C = Care A = Ask T = Tell S = Stay Safe	SMART CATS (w/assembly) Discuss the charter and sign S = Stay Safe M = Don't Meet up A = Accepting Files R = Reliable? T = Tell someone C = Care A = Ask T = Tell S = Stay Safe	SMART CATS (w/assembly) Discuss the charter and sign S = Stay Safe M = Don't Meet up A = Accepting Files R = Reliable? T = Tell someone C = Care A = Ask T = Tell S = Stay Safe	SMART CATS (w/assembly) Discuss the charter and sign S = Stay Safe M = Don't Meet up A = Accepting Files R = Reliable? T = Tell someone C = Care A = Ask T = Tell S = Stay Safe	SMART CATS (w/assembly) Discuss the charter and sign S = Stay Safe M = Don't Meet up A = Accepting Files R = Reliable? T = Tell someone C = Care A = Ask T = Tell S = Stay Safe	SMART CATS (w/assembly) Discuss the charter and sign S = Stay Safe M = Don't Meet up A = Accepting Files R = Reliable? T = Tell someone C = Care A = Ask T = Tell S = Stay Safe
Autumn 2 Health, Well-being and Lifestyle	Know some simple examples of the rules to abide by when using technology	Explain rules to keep myself safe when using technology both in and beyond the home	Know how IT use rules / guides can help anyone accessing online technologies	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	Explain how using technology can be a distraction from other things, in both a positive and negative way.	Describe ways technology can affect health and well-being both positively (e.g. mindfulness apps) and negatively.	Describe common systems that regulate age-related content (e.g. PEGI, BBFC, parental warnings) and describe their purpose.

Spring 1 **Managing Online Information**	Identify devices I could use to access information on the internet.	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.	Explain why some information I find online may not be real or true	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.	Describe some of the methods used to encourage people to buy things online (e.g. advertising offers; in-app purchases, pop-ups) and can recognise some of these when they appear online.	Describe how fake news may affect someone's emotions and behaviour, and explain why this may be harmful	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)
Spring 2 **Privacy and Security**	Identify some simple examples of my personal information (e.g. name, address, birthday, age, location)	Recognise more detailed examples of information that is personal to someone (e.g where someone lives and goes to school, family names).	Explain and give examples of what is meant by 'private' and 'keeping things private'	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.	Explain that internet use is never fully private and is monitored, e.g. adult supervision.	Explain what a strong password is and demonstrate how to create one.	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).
Summer 1 **Self-Image and Identity**	Recognise, online or offline, that anyone can say 'no' - 'please stop' - 'I'll tell' - 'I'll ask' to somebody who makes them feel sad, uncomfortable, embarrassed or upset.	Recognise that there may be people online who could make someone feel sad, embarrassed or upset	Explain how other people may look and act differently online and offline.	Explain how people can represent themselves in different ways online	Explain that others online can pretend to be someone else, including my friends, and can suggest reasons why they might do this.	Demonstrate how to make responsible choices about having an online identity, depending on context	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.

Summer 2 **Online Relationships**	Give examples of how I (might) use technology to communicate with people I know	Use the internet with adult support to communicate with people I know (e.g. video call apps or services).	Give examples of how someone might use technology to communicate 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).	Explain what it means to 'know someone' online and why this might be different from knowing someone offline	Give examples of how to be respectful to others online and describe how to recognise healthy and unhealthy online behaviours.	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.	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.