Computer Science		Information Technology	Digital Literacy	
Term	**Topic**	**Key Objectives**	**Key Vocabulary**	
		Year 3		
Autumn 1	Computer Systems and Networks 1: Networks	Can I explain what a network is? Can I explain a file's journey? Can I explain how a website works? Can I explain how a router works? Can I explain what packet data is?	device file internet network network switch packet data router	server the cloud user wi-fi wired wireless wireless access point
Autumn 2	Programming: Scratch	Can I explore the programming application, Scratch? Can I program a story by adding blocks in Scratch? Can I plan a remix of an animation by altering existing code? Can I remix an animation by altering the program's code? Can I evaluate a remixed program by reflecting on the changes made to the code?	debug decomposition evaluate	loop program
Spring 1	Microsoft Office 365: Computing Systems and Networks 2: Emailing	Do I understand how we communicate with technology? Do I understand what emails are and how to send one? Do I know how to create an email with an attachment? Do I understand the importance of being kind online?	account attachment Bcc (blind carbon copy) Cc (carbon copy) download	log in log out password recipient scammer spam spoofing subject bar

		Can I recognise when an email is not genuine?	email email address emoji hacker inbox link	username virus
Spring 2	Computing Systems and Networks 3: Journey inside a computer	Can I recognise basic inputs and outputs? Can I identify the components inside a laptop? Do I understand the purpose of computer parts? (related to following instructions) Do I understand the purpose of computer parts? (related to computer memory) Can I decompose a tablet computer?	algorithm assemble CPU (central processing unit) data decompose	desktop disassemble GPU (graphics processing unit)
Summer 1	Video Trailers: Using iPads	Can I plan a book trailer? Can I take photos or videos that tell a story? Can I edit a video? Can I add text and transitions to a video? Can I evaluate video editing?	application camera angle clip cross blur cross fade cross zoom desktop digital device dip to black directional wipe edit film film editing software graphics	import key events laptop music photo plan recording sound effects storyboard time code trailer transition video voiceover

Summer 2	Data Handling: Comparison Cards Databases	Do I understand the terminology around databases? Can I compare paper and computerised databases? Can I sort, filter and interpret data? Can I represent data in different ways? Can I sort data for a purpose?	category chart data database field filter graph information	interpret questionnaire record representation sort spreadsheet
Online Safety	Online Safety – Year 3	Do I understand how the internet can be used to share beliefs, opinions and facts? Can I explain what should be done before sharing information online? Can I identify the effects that the internet can have on people's feelings? Do I understand the ways personal information can be shared on the internet? Do I understand the rules for social media platforms?	accurate age restrictions autocomplete belief charity content digital device fact fake news hoax internet internet of things	opinion online emotions organisation permission privacy settings reliable search search engine share smart devices social media platforms
Year 4				
Autumn 1	Microsoft Office 365: Computing systems and networks: Collaborative Learning	Do I understand that software can be used to work online collaboratively? Do I understand how to contribute to someone else's work effectively? Do I understand how to create a digital survey? Can I create and share a Microsoft Form? Can I analyse data?	average collaborate comment data data representation edit e-document	rating reply resolve reviewing comments share slide

			email insert (file) multiple choice numerical data online presentation	spreadsheet suggestion survey teamwork transition
Autumn 2	Programming 1: Further coding with Scratch	Can I explore how variables and 'if' statements are used in Scratch by identifying their purpose in a game? Can I use conditions and sensors to control what happens in a Scratch game? Can I create a variable to keep a score? Can I combine variables, if statements and sensors to program a multiplication game? Can I debug and evaluate a game by identifying and fixing errors?	condition debug decomposition	evaluate if statement variable
Spring 1	Microsoft Office 365: Creating Media: Web Design	Can I explore the features of Microsoft Sway? Can I plan content for a collaborative webpage? Can I create an engaging webpage? Can I plan and create a website? Can I create and evaluate a website?	assessment audience checklist collaboration content contribution create design embed evaluate features Google Sites hobby	images insert online plan progress published record review style subpage tab theme web page

			homepage hyperlinks	website world wide web
Spring 2	Online Safety Year 4	Can I describe how to search for information and judge accuracy of a search? Can I describe how we are encouraged to buy things online? Can I explain what a fact, opinion of belief is and understand that these are not always true? Can I explain how technology can be designed to act like or impersonate living things? Can I explain how technology can be a distraction and identify when I need to limit the amount of time spent using technology?	accuracy ad advantage advertisement belief bot computer disadvantage distraction fact hashtag implications	in-app purchases influencer opinion program recommendation reliable risk screen time search results snippets sponsored trustworthy
Summer 1	Programming 2: Computational Thinking	Can I apply decomposition and pattern recognition to solve problems? Can I explain and apply abstraction by identifying key details in a problem? Can I design an algorithm to support an everyday task? Can I apply and reflect on computational thinking skills while creating a Scratch project? Can I evaluate a remixed program by reflecting on the effectiveness of computational thinking?	abstraction algorithm debug decomposition	evaluate instructions pattern recognition sequence
Summer 2	Data Handling: Investigating Weather	Can I log data taken from online sources in a spreadsheet? Can I design a weather station?	accurate climate zone condensation cylinder	presenter rain satellite script

		Can I design an automated machine to respond to sensor data? Do I understand how weather forecasts are made? Can I use tablets or digital cameras to present a weather forecast?	degree Celsius evaporation extreme weather filming forecast heat sensor lightning measurement pinwheel	sensor data solar panel temperature thermometer tornado weather weather forecast wind speed
		Year 5		
Autumn 1	Computing systems and Networks: Search Engines	Do I understand what a search engine is and how to use it? Am I aware that not everything I read online is true? Can I search online effectively? Can I create an informative poster? Do I understand how search engines work?	algorithm copyright credit fake news inaccurate index keywords	online page rank search engine TASK web crawler website www
Autumn 2	Programming 1: Scratch Music	Can I tinker with Scratch music elements? Can I create a program that plays music from a given genre? Can I plan a soundtrack program for a specific film genre? Can I program a soundtrack for a specific genre in Scratch? Can I debug and evaluate a soundtrack program?	code debug evaluate input	loop nested loop output program
Spring 1	Data Handling: Mars Rover 1	Can I identify how and why data is collected from space?	8-bit binary ASCII binary	Mars Rover output planet

		Can I read and calculate numbers using binary code? Can I identify the computer architecture of the Mars Rover? Do I understand how binary is used to store different types of data? Can I represent binary as text?	Boolean byte CPU data data size distance input	processing RAM scientist signal store transmit UHF
Spring 2	Programming 2: BBC micro:bit	Can I tinker with a new piece of software? Can I program an animation? Can I recognise coding structures? Can I create a program for a specific task? Can I create a program?	algorithm app debug decompose device input instructions	loop output program screen variable wireless
Summer 1	Stop-motion animation	Do I understand what animation is? Do I understand what stop-motion animation is? Can I plan a stop-motion animation? Can I create a stop-motion animation? Can I edit my stop-motion animation?	animation animator background character decomposition design digital device edit evaluate flipbook	fluid movement frames model moving images onion skinning still images stop motion storyboard thaumatrope zoetrope
Summer 2	Skills showcase: Mars Rover 2	Can I describe how bit patterns represent images as pixels? Can I explain how the data for digital images can be compressed?	3D algorithm binary bitmap CAD	input JPEG memory operating system output

		Can I identify and explain the fetch, decode and execute cycle? Can I learn the basics of using Tinkercad through tutorials? Can I design a functional tyre for the Mars rover using Tinkercad?	compression CPU data drag and drop fetch-decode-execute	pixels RAM RGB ROM transmission tinkering
	Online Safety Year 5	Do I understand how apps can access personal information and how to alter the permissions? Am I aware of the positive and negative aspects of online communication? Do I understand how online information can be used to form judgements? Can I discover ways to overcome bullying? Do I understand how technology can affect health and wellbeing?	accurate advice app application app permissions biography bullying communication emojis health in-app purchases information judgement meme mental health	mindfulness negative contribution online online communication opinion organisation password personal information positive contribution real world strong password summarise support trusted adult well-being
		Year 6		
Autumn 1	Computing systems and networks: Bletchley Park and the history of computers	Do I understand there are many different types of secret codes? Do I understand the importance of having a secure password? Can I recognise the importance of the history of computers and create a well-researched presentation?	acrostic code audio advert brute force hacking Caesar cipher chip and PIN system cipher combination	Nth letter cipher password pigpen cipher scrambled script secret secure

		Can I design a computer of the future? Can I create an audio advert for a future computer?	date shift cipher discovery invention	technological advancement trial and error
Autumn 2	Computing systems and networks: Exploring AI	Can I explore the basics of AI? Can I recognise how AI processes and responds to text prompts? Can I recognise how AI can be used to explore and generate images? Can I explore how AI-generated code can be used to create a webpage? Can I debate the ethical implications of AI?	AI AI-generated image AI-generated text algorithm applications authenticity code considerations debate ethical fake	generate HTML implications instructions modify output prompt refine response trained
Spring 1	Data Handling 1: Big Data 1	Can I identify how barcodes and QR codes work? Do I know how infrared waves transmit data? Can I recognise how RFID is used? Can I input and analyse real world data? Can I analyse and evaluate data?	algorithm barcode boolean data encrypt	infrared QR code RFID spreadsheet
Spring 2	Programming: Exploring Python	Can I recognise Python as a text-based language and link it to block coding? Can I follow Python's syntax rules so the computer understands my instructions? Can I used nested loops to create patterns on the micro:bit? Can I adapt existing code by changing loops and variables to create a new outcome? Can I debug Python code by spotting and fixing errors in spacing, syntax and loops?	debug error evaluate loop	nested loop syntax

Summer 1	Data handling 2: Big Data 2	Can I explain how data can be safely transferred? Can I investigate the data usage of different online activities? Can I identify how data collection can improve city life? Can I design a system for turning a school into a smart school? Can I present ideas for turning a school into a smart school?	big data bluetooth corrupted data energy GPS improve infrared internet of things personal privacy	QR codes revolution RFID SIM simulation smart city smart school stop motion threat wi-fi wireless
Summer 2	Skills showcase: Inventing a product	Can I design an electronic product? Can I code and debug a program? Can I use CAD software to design a product? Can I create a website? Can I create a video advert?	abstraction adapt advert algorithm bug code coding debug design edit electronic evaluate image rights images	information input loop photos product program repetition selection sequence software structure variable video website
	Online Safety Year 6	Can I describe online issues that give us negative feelings and know how to get help? Can I explore the impact and consequences of sharing online?	anonymity antivirus biometrics block	privacy settings private reliable source report

		Do I know how to create a positive online reputation? Can I describe how to capture bullying content as evidence? Can I manage personal passwords effectively? Am I aware of strategies that help protect people online?	consent digital footprint digital personality financial information hacking inappropriate malware online bullying online reputation password personal information phishing	respect scammers screen grab screenshot secure selfie software updates two-factor authentication URL username