Computing Route Planner

Introduction to Curriculum Route Planners

Route Planners outline the Key Stages 1-3 curriculum to be taught within each campus of the Bury St Edmunds All-Through Trust. Each Route Planner has been designed to take into account both the new Primary Curriculum and the new GCSE specifications so that pupils' learning progresses seamlessly from ages 4 to 16 and prepares them thoroughly for the modern world and for the values which are fundamental to life in modern Britain.

Route Planners have been created for all core and foundation subjects. They have been written by Curriculum Development Teams, comprising subject leaders from each Trust campus.

The purposes of the Route Planner are to ensure coherence of curriculum across the Trust, to provide a framework for subject leaders to develop Schemes of Work, and to provide parents with information on what children will learn during each year of their education.

Year Group	Area of Study/ Key Skills	Content/Topics addressed	Assessment Objectives
KS1	Using and communicating safely	E-safety User names and password	*N.B. knowledge and understanding of Computing is not assessed discretely until Year Five.. The following objectives are designed to guide teachers in the development of Schemes of Work.* • recognise common uses of information technology beyond school • use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies
	Solving problems	Learning to program: Unplugged Human bots Light bot Daisy bot	• understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions • create and debug simple programs • use logical reasoning to predict the behaviour of simple programs
	Creating things	Images Sound & music Videos Document Presentations	• create and debug simple programs • use technology purposefully to create, organise, store, manipulate and retrieve digital content
	Networking and finding things	Searching online Unplugged sorting and searching Network treasure hunt	• recognise common uses of information technology beyond school
	Looking inside things	What is a computer?	• use technology purposefully to create, organise, store, manipulate and retrieve digital content

Year Group	Area of Study/ Key Skills	Content/Topics addressed	Assessment Objectives
Lower KS 2	Using and communicating safely	E-safety Using social media safely User names and password Network drives Email	*N.B. knowledge and understanding of Computing is not assessed discretely until Year Five.. The following objectives are designed to guide teachers in the development of Schemes of Work.* • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

	Solving problems	Learning to program using: Scratch Junior Kodu	• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information • use sequence, selection, and repetition in programs; work with variables and various forms of input and output • use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
	Creating things	Images Sound & music Videos Documents Presentations Spreadsheets	• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
	Networking and finding things	Searching online Linear search compared to binary search Types of networks (wired and wireless) and addresses: unplugged activity	• understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration • select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact
	Looking inside things	Naming the parts inside – input, output, process	• • use sequence, selection, and repetition in programs; work with variables and various forms of input and output • understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration

Year Group	Area of Study/ Key Skills	Content/Topics addressed	Assessment Objectives
5	Using and communicating safely	E-safety Using social media safely User names and password Network drives Using the cloud Email	• Use technology safely and responsibly; • Identify a range of ways to report concerns
	Solving problems	Starting to program	• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.
	Creating things	Images Sound & music Videos Documents Presentations Spreadsheets	• Using a range of digital devices, design and create content that accomplish given goals. • Collect, analyse, evaluate and present data and information in variety of formats
	Networking and finding things	Using the School Network Using the internet	• Recognise the different type of networks used. • Recognise how networks can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration
	Looking inside things	Personal Computer	• Identify the components of a computer system.
6	Using and communicating safely	E-safety Using social media safely User names and password	• Use technology safely, respectfully and responsibly; • Identify a range of ways to report concerns about content and who to contact

		Network drives Using the cloud Email	
	Solving problems	Learning to program	• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.
	Creating things	Images Sound & music Videos Documents Presentations Spreadsheets	• Using a range of digital devices, design and create content that accomplish given goals. • Collect, analyse, evaluate and present data and information in variety of formats
	Networking and finding things	Searching online- Cyber hunts Searching and page rank Cloud storage and world wide networking- how it works.	• Recognise the different type of networks used Understand how networks can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration
	Looking inside things	Personal Computer Tablet	• Recognise inputs, processes and outputs when solving problems and creating things. • Identify the components of a computer system.

7	Using and communicating safely	E-safety Using social media safely User names and password Network drives Using the cloud email	• Understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy • Recognise inappropriate content, contact and conduct, and know how to report concerns.
	Solving problems	Understanding how to program using 2 or more programming languages	• Design, use and evaluate programs using computational thinking. • Understand computers use binary.
	Creating things	Images	• Undertake creative projects that involve selecting, using, and combining multiple

		Sound & music Videos Documents Presentations Spreadsheets Database Apps	applications to achieve a specified goals • Collect and analyse data for a creative project to meet the needs of a user
	Networking and finding things	Searching online URLs	• Understand the different type of networks used for a range of different computer systems • Understand how to use search engines effectively.
	Looking inside things	Hardware and Software Computer Systems	• Identify the hardware and software components that make up computer systems
8	Using and communicating safely	E-safety Using social media safely User names and password Network drives Using the cloud email	• Understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy • Recognise inappropriate content, contact and conduct, and know how to report concerns.
	Solving problems	Learning to program	• Design, use and evaluate programs using computational thinking. • Be able to convert from denary to binary and vice versa.
	Creating things	Images Sound & music Videos Documents Presentations Spreadsheets Database Apps	• Undertake creative projects that involve selecting, using, and combining multiple applications to achieve a specified goals across a range of devices • Collect, analyse and assess the trustworthiness of data for a creative project to meet the needs of a user
	Networking and finding things	Searching online	• Explain the different type of networks used for a range of different computer systems • Understand how a search engine works
	Looking inside things	Hardware and Software Computer Systems	• Understand the roles of the hardware and software components that make up computer systems

9	Using and communicating safely	E-safety Using social media safely User names and password Network drives Using the cloud email	• Understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy • Recognise inappropriate content, contact and conduct, and know how to report concerns.
	Solving problems	Learning to program	• Design, use and evaluate programs using computational thinking. • Use binary to represent numbers and understand Boolean logic (AND, OR and NOT).
	Creating things	Images Sound & music Videos Documents Presentations Spreadsheets Database App	• Undertake creative projects that involve selecting, using, and combining multiple applications to achieve a specified goals across a range of devices
	Networking and finding things	Wired and wireless networks	• Understand wired and wireless networks • Using a LAN effectively
	Looking inside things	Hardware and Software Computer Systems Rebuilding computers	• Understand the hardware and software components that make up computer systems • Understand how instructions are stored and executed within a CPU.