

Yearly Overview

Subject: Computing

Year Group: 3

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit of work	<b>Networks and the Internet</b>	<b>Programming: Scratch</b>	<b>Emailing</b>	<b>Journey Inside a Computer</b>	<b>Video trailers</b>	<b>Comparing cards databases</b>
Link to programme of study	Computer systems and networks	Programming	Computer systems and networks	Computer systems and networks	Creating media	Data handling
Composite Knowledge	<p>To understand what a network is and how a school network might be organised.</p> <p>To know that a server is central to a network and responds to requests made.</p> <p>To know that a router connects us to the internet.</p> <p>To know how the internet uses networks to share files.</p> <p>To know what a packet is and why it is important for website data transfer.</p>	<p>To know that Scratch is a programming language and some of its basic functions.</p> <p>To understand how to use loops to improve programming.</p> <p>To understand how decomposition is used in programming.</p> <p>To understand that you can remix and adapt existing code.</p>	<p>To understand that email stands for 'electronic mail.'</p> <p>To know that an attachment is an extra file added to an email.</p> <p>To understand that emails should contain appropriate and respectful content.</p> <p>To know that cyberbullying is bullying using electronics such as a computer or phone.</p>	<p>To know the roles that inputs and outputs play on computers.</p> <p>To know what some of the different components inside a computer are e.g. CPU, RAM, hard drive, and how they work together.</p> <p>To know what a tablet is and how it is different from a laptop/desktop computer.</p>	<p>To know that different types of camera shots can make my photos or videos look more effective.</p> <p>To know that I can edit photos and videos using film editing software.</p> <p>To understand that I can add transitions and text to my video.</p>	<p>To know that a database is a collection of data stored in a logical, structured and orderly manner.</p> <p>To know that computer databases can be useful for sorting and filtering data.</p> <p>To know that different visual representations of data can be made on a computer.</p>
Key Concepts and key skills  (Component / intentional knowledge - what they need to understand)	<p><b>Computer Science - Networks and Data Representation</b> Learning about the purpose of routers. Understanding the role of the key components of a network. Understanding that websites &amp; videos are files that are shared from one computer to another. Learning about the role of packets. Understanding how networks work and their purpose. Identifying the key components within a network, including whether they are wired or wireless. Recognising links between networks and the internet. Learning how data is transferred.</p>	<p><b>Computer Science - Computational Thinking</b> Using decomposition to explore the code behind an animation. Using repetition in programs. Using logical reasoning to explain how simple algorithms work. Explaining the purpose of an algorithm. Forming algorithms independently. Making reasonable suggestions for how to debug their own and others' code.</p> <p><b>Computer Science - Programming</b> Using logical thinking to explore more complex software; predicting, testing and explaining what it does. Incorporating loops to make code more efficient. Continuing existing code.</p>	<p><b>Digital Literacy and Online Safety</b> Learning about cyberbullying. Learning that not all emails are genuine, recognising when an email might be fake and what to do about it.</p> <p><b>Information Technology - Using Email and the Internet</b> Learning to log in and out of an email account Writing an email including a subject, 'to' and 'from'. Replying to an email. Sending an email with an attachment.</p> <p><b>Information Technology - Wider Use of Technology</b> Understanding the purpose of emails.</p>	<p><b>Computer Science - Hardware</b> Understanding what the different components of a computer do and how they work together. Drawing comparisons across different types of computers.</p> <p><b>Computer Science - Computational Thinking</b> Using decomposition to explain the parts of a laptop computer. Explaining the purpose of an algorithm.</p>	<p><b>Computer Science</b> Using logical thinking to explore more complex software; predicting, testing and explaining what it does.</p> <p><b>Information Technology - Using Software</b> Taking photographs and recording video to tell a story. Using software to edit and enhance their video adding music, sounds and text on screen with transitions.</p>	<p><b>Computer Science</b> Using logical thinking to explore more complex software; predicting, testing and explaining what it does.</p> <p><b>Information Technology - Using Data</b> Understanding the vocabulary associated with databases: field, record, data. Learning about the pros and cons of digital versus paper databases. Sorting and filtering databases to easily retrieve information. Creating and interpreting charts and graphs to understand data.</p>
Learning objectives	<p><b>Lesson 1:</b> To understand what a network is and understand our school network.</p> <p><b>Lesson 2:</b> To understand how information moves around a network and begin to recognise real world networks.</p> <p><b>Lesson 3:</b> To understand how the Internet works and explain a website's journey.</p> <p><b>Lesson 4:</b> To explore the role of routers.</p> <p><b>Lesson 5:</b> To understand the role of packets.</p>	<p><b>Lesson 1:</b> To explore a programming application.</p> <p><b>Lesson 2:</b> To use repetition (a loop) in a program.</p> <p><b>Lesson 3:</b> To program an animation.</p> <p><b>Lesson 4:</b> To program a story.</p> <p><b>Lesson 5:</b> To program a game.</p>	<p><b>Lesson 1:</b> To understand what email is used for and to send an email.</p> <p><b>Lesson 2:</b> To edit email content and add an attachment.</p> <p><b>Lesson 3:</b> To understand the importance of being kind online and what this looks like.</p> <p><b>Lesson 4:</b> To understand that cyberbullying involves being unkind online.</p> <p><b>Lesson 5:</b> To understand that not all emails are genuine.</p>	<p><b>Lesson 1:</b> To recognise basic inputs and outputs.</p> <p><b>Lesson 2:</b> To decompose a laptop.</p> <p><b>Lesson 3:</b> To understand the purpose of computer parts.</p> <p><b>Lesson 4:</b> To understand the purpose of computer parts.</p> <p><b>Lesson 5:</b> To decompose a tablet computer (Use Google Slides to annotate images.)</p>	<p><b>Lesson 1:</b> To plan a book trailer.</p> <p><b>Lesson 2:</b> To take photos or videos to tell a story.</p> <p><b>Lesson 3:</b> To edit a video.</p> <p><b>Lesson 4:</b> To add text and transitions to a video.</p> <p><b>Lesson 5:</b> To evaluate video editing.</p>	<p><b>Lesson 1:</b> To understand the terminology around databases.</p> <p><b>Lesson 2:</b> To compare paper and computerised databases.</p> <p><b>Lesson 3:</b> To sort, filter and interpret data.</p> <p><b>Lesson 4:</b> To represent data in different ways.</p> <p><b>Lesson 5:</b> To sort data for a purpose.</p>
Vocabulary	internet, network, network switch, router, server, the cloud, WiFi, wireless access point	Tinkering, sprite, debug, repetition, loop, algorithm	account, spam, attachment, username, BCC, CC, computer, cyberbullying, domain, email, email account, emoji, information, log off/ log on, password	CPU (central processing unit), GPU (graphics processing unit), HDD (hard disk drive), QR code, RAM (random access memory), ROM (read only memory)	Edit, key events, time code, video, voiceover	Categorise, data, database, fields (data), filter (data), graphs and charts, sort, spreadsheet
Links to Prior Knowledge	<b>Year 2:</b> Computing systems and networks 1: What is a computer?	<b>Year 2:</b> Programming 2: Scratchjr	<b>Year 2:</b> Computing systems and networks 2: Word processing	<b>Year 2:</b> Computing systems and networks 1: What is a computer?	<b>Year 2:</b> Stop motion – Option 2: Devices with cameras	<b>Year 2:</b> Data handling: International Space Station
Key knowledge for assessment	<p>What is a network? How is the school's network organised?</p> <p>What is a server and what does it do?</p> <p>What is a router?</p> <p>How does the internet share files?</p> <p>How does the data from a website reach my computer?</p>	<p>What is Scratch?</p> <p>How do loops help to improve programming?</p> <p>How do we use decomposition in programming?</p> <p>How can you remix and adapt existing code?</p>	<p>What does email stand for?</p> <p>What is an attachment?</p> <p>What should an email contain?</p> <p>What is cyberbullying?</p>	<p>What roles do inputs and outputs play on computers?</p> <p>What are the different components in a computer? How do they work together?</p> <p>How is a tablet different from a laptop/desktop computer?</p>	<p>How can camera shots make your photos or videos look more effective?</p> <p>How can you edit photos and videos using film editing software?</p> <p>How can you add transitions and text to your video?</p>	<p>What is a database?</p> <p>What are databases useful for?</p> <p>How can different visual representations of data be made on a computer?</p>

Possible cross curricular links	English / RSE / Maths	English / Music	English	English	English	Maths
Resources	<a href="https://www.kapowprimary.com/wp-content/uploads/2020/11/Y3-Networks-and-the-Internet-KO.pdf">https://www.kapowprimary.com/wp-content/uploads/2020/11/Y3-Networks-and-the-Internet-KO.pdf</a>  Canva for Education, or Google Slides for design work.	<a href="https://www.kapowprimary.com/wp-content/uploads/2020/11/Y3-Programming-Scratch-KO.pdf">https://www.kapowprimary.com/wp-content/uploads/2020/11/Y3-Programming-Scratch-KO.pdf</a>  Laptops Videos on scratch Powerpoints Posters/hands out sheets	<a href="https://www.kapowprimary.com/wp-content/uploads/2020/11/KO-Y3-Emailing.pdf">https://www.kapowprimary.com/wp-content/uploads/2020/11/KO-Y3-Emailing.pdf</a>	<a href="https://www.kapowprimary.com/wp-content/uploads/2020/08/Y3-Comp-Journey-inside-a-computer-KO.pdf">https://www.kapowprimary.com/wp-content/uploads/2020/08/Y3-Comp-Journey-inside-a-computer-KO.pdf</a>  Teachers need to apply for 'Canva for Education' accounts - <a href="https://support.canva.com/account-basics/canva-for-education/apply-canva-for-education/">https://support.canva.com/account-basics/canva-for-education/apply-canva-for-education/</a> Canva for Education, Adobe Spark or Google Slides for design work. Hello Ruby books (see Altus)	<a href="https://www.kapowprimary.com/wp-content/uploads/2020/11/Y3-Digital-literacy-KO-1.pdf">https://www.kapowprimary.com/wp-content/uploads/2020/11/Y3-Digital-literacy-KO-1.pdf</a>	<a href="https://www.kapowprimary.com/wp-content/uploads/2020/11/Y3-Top-trumps-database-KO.pdf">https://www.kapowprimary.com/wp-content/uploads/2020/11/Y3-Top-trumps-database-KO.pdf</a>
Online safety unit:	<b>Lesson 1</b>	<b>Lesson 2</b>	<b>Lesson 3</b>	<b>Lesson 4</b>		
National Curriculum KS2 (skills)	<p><b>Key stage 2</b>  <b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.</li> <li>• use sequence, selection, and repetition in programs; work with variables and various forms of input and output.</li> <li>• use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</li> <li>• 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.</li> <li>• use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</li> <li>• 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.</li> <li>• use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> </ul>					