

Year / Topic	Term	National Curriculum Links	Length of Topic
8.1 File Management, Viruses and Networking	Autumn 1	CS3.4, CS3.5, IT3.1, IT3.2	8 Weeks
Resources Windows 8 Microsoft Word Internet Explorer Envelopes	<u>Key Classroom ICT Activity</u> Students will revisit file management and computer viruses at the beginning of this unit and then go through a gentle introduction to the world of computers looking at the function and purpose of a computer, binary data and bit patterns, Moore’s Law, main computer components, hardware and software, input, output and storage devices, different types of networks and e-waste.		
Target Skills Understand computer networks. Binary Code Hardware/Software	Assessment - Progression Pathways All children should – <i>CS, Understands when computers are used. Understands the main functions of the OS. Understands how to effectively use search engines, and know how search results are selected, including that search engines use ‘web crawler programs’.</i> <i>IT, Knows the difference between physical, wireless and mobile networks.</i> <i>CS, Defines data types: real numbers and Boolean. Knows that digital computers use binary to represent all data. Understand how bit patterns represent numbers and images. Recognises and understands the function of the main internal parts of basic computer architecture.</i> <i>IT, Knows that there is a range of OS and application software for the same hardware.</i> Most children should – <i>CS, Understands how numbers, images and sounds and character sets use the same bit patterns. Understands the von Neumann architecture and in relation to fetch-execute cycle.</i> <i>IT, Knows the names of hardware and protocols associated with networking computer systems.</i> Some children should - <i>CS, Knows the relationship between data representation and data quality. Knows that processors have instruction sets and that these relate to low-level instructions carried out by a computer.</i> <i>IT, Knows the purpose of hardware and protocols associated with networking computer systems.</i> <i>CS, Performs operations using bit patterns. Understands and can explain the need for data comparison. Understands and can explain Moore’s Law. Understands and can explain multitasking by computers.</i> <i>IT, Understands hardware associated with networking computer systems, including WANs and LANs, understands their purpose and how they work, including MAC addresses.</i>		
Curriculum Links Science – Electrical circuits and circuit components. History – Bletchley Park, the history of computing.			
E-Safety Coverage Students learn how information can be communicated over open channels and the internet using cryptography. They learn about the public key system used to sign and encrypt content.			

Assessment Criteria	8.1 File Management, Viruses and Networking
Emerging	<ul style="list-style-type: none"> ✓ I can understand when computers are used. ✓ I can understand the main functions of the OS. ✓ I can understand how to effectively use search engines. ✓ I can explain the difference between physical, wireless and mobile networks.
Developing	<ul style="list-style-type: none"> ✓ I can define data types. ✓ I can explain that digital computers use binary to represent all data. ✓ I can show understanding of how bit patterns represent numbers and images. ✓ I can recognise and understand the function of the main internal parts of basic computer architecture. ✓ I can show understanding that there is a range of OS and application software for the same hardware.
Secure	<ul style="list-style-type: none"> ✓ I can show understanding how numbers, images and sounds and character sets use the same bit patterns. ✓ I know the names of hardware and protocols associated with networking computer systems.

Mastered

- ✓ I can show understanding that processors have instruction sets and that these relate to low-level instructions carried out by a computer.
- ✓ I can perform operations using bit patterns.
- ✓ I can show understanding and can explain Moore's Law.
- ✓ I can show understanding and can explain multitasking by computers.
- ✓ I can understand hardware associated with networking computer systems, including WANs and LANs.