

## Mapping KS3 and KS4 Computing Curriculum (2014) to LGfL History of Computing

KS3-4

Support for KS3 and 4 teachers includes the resources that develop core understanding of the component parts of a computer system. Iconic computer systems at The National Museum of Computing are featured to develop a depth of understanding for the different elements. Students are encouraged to complete further research into other computer systems, using the framework provided systems to complete their own analysis and apply their understanding to other systems (both old and new).

Lesson Plan	KS3 cross-curricular Aims	KS4 Computing Attainment Targets	HoC resources
<b>01 Naked Computers</b>	<p><b>KS3 Computing</b> : understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems</p> <p><b>KS3 English:</b> learning new vocabulary, relating it explicitly to known vocabulary and understanding it with the help of context and dictionaries</p> <p><b>KS3 English:</b> drawing on new vocabulary and grammatical constructions from their reading and listening, and using these consciously in their writing and speech to achieve particular effects</p> <p><b>KS3 Science:</b> make predictions using scientific knowledge and understanding</p> <p><b>KS3 Design Technology:</b> understand and use the properties of materials and the performance of structural elements to achieve functioning solutions</p>	<p><b>KS4 Computing</b> : Develop their capability, creativity and knowledge in computer science, digital media and information technology</p>	<ul style="list-style-type: none"> <li>• <a href="#">Inside a computer section</a></li> <li>• <a href="#">Inside a computer</a> (photo)</li> <li>• <a href="#">What makes a computing device</a> (presentation)</li> <li>• <a href="#">WITCH computer – oldest computer</a> (video)</li> <li>• <a href="#">WITCH – What it did and why</a> (video)</li> </ul>
<b>02 Data flow</b>	<p><b>KS3 Computing:</b> understand the hardware and software components that make up computer systems, and how they communicate with one</p>	<p><b>KS4 Computing:</b> Develop their capability, creativity and knowledge in computer science, digital media and information technology.</p>	<ul style="list-style-type: none"> <li>• <a href="#">Data flow section</a></li> <li>• <a href="#">Sort card activity</a> (presentation)</li> <li>• <a href="#">Data flow</a> diagram</li> </ul>

another and with other systems

**KS3 English:** making inferences and referring to evidence in the text

**KS3 Mathematics:** select appropriate concepts, methods and techniques to apply to unfamiliar and non-routine problems.

- [Heat sink fan](#) (photo)

### 03 Input and Output

**KS3 Computing:** understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems

**KS3 English:** learning new vocabulary, relating it explicitly to known vocabulary and understanding it with the help of context and dictionaries

**KS3 Mathematics:** extend their understanding of the number system, make connections between number relationships, and their algebraic and graphical representations

**KS3 Mathematics:** establish when to use additive, multiplicative or proportional reasoning from the underlying structure of a problem when working numerically

**KS3 Science:** understand that scientific methods and theories develop as scientists modify earlier explanations to take account of new evidence and ideas, together with the importance of publishing results and peer review

**KS4 Computing:** Develop their capability, creativity and knowledge in computer science, digital media and information technology.

- [Input and output section](#)
- [Input and output](#) (presentation)
- [WITCH – Input](#) (video)
- [WITCH – processing input](#) (video)
- [ICL Mainframe input](#) (video)
- [Colossus input](#) (video)
- [Colossus Output](#) (video)
- [Elliot 903 output](#) (video)
- [Elliot 803 input and output](#) (video)
- [IBM 1130 punch card](#) (video)
- [IBM 1130 card reader](#) (video)
- [IBM 1130 output](#) (video)

**KS3 History:** challenges for Britain, Europe and the wider world 1901 to the present day (Second World War)

**04 System Process**

**KS3 Computing:** understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems

**KS3 Computing:** understand and use binary digits, such as to be able to convert between binary and decimal and perform simple binary addition

**KS3 English:** making inferences and referring to evidence in the text

**KS3 Mathematics:** identify variables and express relations between them algebraically and graphically

**KS4 Computing:** Develop their capability, creativity and knowledge in computer science, digital media and information technology.

- [Computing system process section](#)
- [Where is the processor](#) (presentation)
- [WITCH processing reliability](#) (video)
- [IBM 1130 processing](#) (video)
- [Acorn – Arm processing](#) (video)

**05 Storage**

**KS3 Computing:** understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems

**KS3 Computing:** understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits

**KS3 English:** learning new vocabulary, relating it explicitly to known vocabulary and understanding it with

**KS4 Computing:** Develop their capability, creativity and knowledge in computer science, digital media and information technology.

- [Storage section](#)
- [Memory storage](#) (presentation)
- [Memory game](#) (presentation)
- [WITCH Storage RAM & counters](#) (video)
- [WITCH Storage RAM expansion](#) (video)
- [ICL Mainframe 2966 Storage](#) (video)
- [ICL Mainframe 2966 – single disk storage](#) (video)
- [Elliot 903 – storage](#) (video)
- [Elliot 803 – storage](#) (video)
- [IBM 1130 – storage 1](#) (video)
- [IBM 1130 – storage 2](#) (video)

the help of context and dictionaries

**KS3 English:** drawing on new vocabulary and grammatical constructions from their reading and listening, and using these consciously in their writing and speech to achieve particular effects

**KS3 Science:** pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility

**KS3 Science:** electric current, measured in amperes, in circuits, series and parallel circuits, currents add where branches meet and current as flow of charge

**06 How we interact**

**KS3 Computing:** understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems

**KS3 Computing:** understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits

**KS3 Mathematics:** develop their mathematical knowledge, in part through solving problems and evaluating the outcomes

**KS4 Computing:** Develop their capability, creativity and knowledge in computer science, digital media and information technology.

- [Interaction section](#)
- [Hardware and software](#) (presentation)
- [A3000 - Birth of Graphic User Interface](#) (video)
- [Elliot 903 Operating System 1](#) (video)
- [Elliot 903 Operating System 2](#) (video)