

Computer Science Year 10 Long Term Plan

Rationale (with end points): Understand and apply the fundamental principles and concepts of Computer Science, including abstraction, decomposition, logic, algorithms, and data representation. Analyse problems in computational terms through practical experience of solving such problems, including designing, writing and debugging programs. Think creatively, innovatively, analytically, logically and critically. Understand the components that make up digital systems, and how they communicate with one another and with other systems. Understand the impacts of digital technology to the individual and to wider society. Apply mathematical skills relevant to Computer Science.

Term	Topic	Knowledge	Skills	Reading /wider reading
Autumn term 1	1.1, 1.2	Introduction to course SLR 1.1 Systems architecture 6 Lessons SLR 1.2 Memory and storage (part 1) 5 Lessons Plus 5 dedicated programming lessons	SLR 1.1 Student workbook SLR 1.1 End of topic test	The evolution of hardware over the last 50 years https://www.computerhistory.org/timeline/computers/
Autumn 2	1.2	SLR 1.2 Memory and storage (part 1) 2 Lessons SLR 1.2 Memory and storage (part 2) 12 Lessons Plus 6 dedicated programming lessons	SLR 1.2 Student workbook (part 1) SLR 1.2 End of topic test (part 1) SLR 1.2 Student workbook (part 2) SLR 1.2 End of topic test (part 2)	Big data and invasion of privacy https://venturi-group.com/is-big-data-a-good-thing-or-a-n-invasion-of-privacy/
Spring 1	1.3	SLR 1.3 Computer networks, connections and protocols 12 Lessons Plus 3 dedicated programming lessons		What is intelligence? Can it be mimicked by a machine? https://towardsdatascience.com/artificial-intelligence-c-an-never-be-truly-intelligent-227fe9149b65

<p>Spring 2</p>	<p>1.3, 1.4</p>	<p>SLR 1.3 Computer networks, connections and protocols 2 Lessons SLR 1.4 Network security 10 Lessons Plus 3 dedicated programming lessons</p>	<p>SLR 1.3 Student workbook SLR 1.3 End of topic test</p>	<p>How binary made possible modern computers https://www.howtogeek.com/367621/what-is-binary-and-why-do-computers-use-it/</p>
<p>Summer 1</p>	<p>1.4, 1.5</p>	<p>SLR 1.4 Computer networks, connections and protocols 2 Lessons SLR 1.5 System software 6 Lessons Plus 5 dedicated programming lessons</p>	<p>SLR 1.4 Student workbook SLR 1.4 End of topic test SLR 1.5 Student workbook SLR 1.5 End of topic test</p>	<p>Disasters caused by errors in algorithms https://raygun.com/blog/costly-software-errors-history/</p>
<p>Summer 2</p>	<p>1.6</p>	<p>SLR 1.6 Ethical, legal, cultural and environmental concerns 9 Lessons 8 lesson text-based adventure game</p>	<p>SLR 1.6 Student workbook SLR 1.6 End of topic test</p>	<p>Can we populate the galaxy using AI? https://www.space.com/artificial-intelligence-models-milky-way-andromeda-collision</p>