



Topic Name	Term	Skills Developed	Next link in curriculum	Other Notes
NEA Programming Project (continued)	Autumn 1	• Independent NEA project. • Analyse, design, implement, test and evaluate a system <i>developed for a real end user to fulfil a specific need.</i>		Links to Prior Learning: Y10 Algorithms Y12 Programming Techniques Y11 Creating Robust Programs Y12 Computational Thinking Y12 Data Structures and Algorithms
Exchanging Data	Autumn 2 / Spring 1	• Compression – Lossy/lossless/ comparison of lossless algorithms. • Encryption – Caesar (substitution) ciphers, transposition ciphers, Vernam cipher. • Symmetric vs Asymmetric Encryption. • Hashing		Links to Prior Learning: Y10 – Storage / Representing Data Y10 Programming Fundamentals (SQL elements) Y11 – Network Security
Data Types and Boolean Logic	Autumn 2 / Spring 1	• Binary number representation – positive and negative – Sign and magnitude / twos complement. • Floating point / normalisation • Bitwise manipulation. • Character Sets • Boolean algebra • Simplification of expressions.		Links to Prior Learning: Year 11 – Boolean Logic (Spring 2) Year 10 – Data Representation (Spring 1)



		• <i>Boolean algebra laws.</i>		
<i>Social / Legal / Ethical / Cultural Aspects</i>	<i>Spring 2</i>	• Computer related legislation. • Moral, social, ethical and cultural issues in computing with areas such as AI, Automation, privacy, censorship.		Links to Prior Learning: Y11 – Social Ethical Legal Factors (Autumn 1)