



Learning Aims and Curriculum Intent:

Understand and apply the fundamental principles and concepts of Computer Science, including problem solving, logic, algorithms, and programming • analyse problems in computational terms, and have exposure to practical experience of writing computer programs in order to solve such problems • learn about, discuss and evaluate both new and unfamiliar technologies • become responsible, confident and creative users of Computer Science and related technologies • 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.

Term	Content, Key Questions and Knowledge	Skills	Assessment
Michaelmas	<p><u>Computer hardware</u></p> <ul style="list-style-type: none"> components of a computer • internal components of a computer and their function • peripherals and their function. <p><u>Computer software</u></p> <ul style="list-style-type: none"> Operating System • System Software • types of utility software in different contexts • types of application software in different contexts <p><u>Computer memory and storage</u></p> <ul style="list-style-type: none"> Primary Storage • Secondary Storage <p><u>Moral, legal, and environmental concerns</u></p> <ul style="list-style-type: none"> moral issues • legal issues • environmental issues • open source and proprietary software • Computer Science legislation 	<p>classify the components of a computer, identify the basic function of the common internal components of a computer, identify the basic functions of common peripherals, identify a range of operating systems, Identify a range of common application software packages, state the purpose of different system utilities, describe the purpose of primary memory, describe common storage technologies, State the purpose of each of the following legislations: • Data Protection Act (1998) • Computer Misuse Act (1990) • Copyright, Design and Patents Act (1998).</p>	<p>2 Examinations at the end of the Michaelmas term.</p> <p>Each exam contributes 20% to final qualification grade</p>
Lent	<p><u>Programming techniques</u></p> <ul style="list-style-type: none"> variables • input, output and storage of data • sequence • selection • iteration • operators • comments 	<p>Use the listed programming conventions to address various computational scenarios.</p>	<p>Programming Project to be completed by end of Lent Term</p> <p>Project contributes 20% to final qualification grade.</p>
Trinity	<p><u>Data Representation</u></p> <ul style="list-style-type: none"> units of computer memory • data structure and data compression • data in the form of binary digits <p><u>Algorithms</u></p> <ul style="list-style-type: none"> computational thinking • binary/denary numbers • flow charts <p><u>Computational logic</u></p> <ul style="list-style-type: none"> Boolean logic • Boolean operators • arithmetic operations 	<p>Understand that computer memory or storage are measured using different units</p> <p>Understand the purpose of data compression in terms of storage and compression.</p> <p>Understand how data can be represented digitally, in the form of binary digits for: • text • sounds • pictures</p>	<p>2 Examinations to be completed in early Trinity term.</p> <p>Each exam contributes 20% to final qualification grade.</p> <p>Extended programming challenges beyond this point.</p>

What consolidation looks like in this subject		
Examples of Homework	Exam style practice questions. Opportunity for independent study on specified topics to develop greater understanding of topics covered.	
Key terminology	Sequence, Selection, Iteration, Memory, Storage, Peripheral, Open Source, Proprietary, Integer, Float, Boolean, String,	
Super-curricular enrichment and scholarly extension	Read: Computing Sharepoint Site (News Feed), MCI Resources Watch: BBC Click, Listen: BBC Sounds - Podcasts (Technology Section) Visit: 3D Virtual Tour – The National Museum of Computing (tnmoc.org)	
Useful websites	Entry Level - Computer Science - R354 (from 2016) - OCR www.gcsepod.com KS3 Computer Science - BBC Bitesize Online dangers - Online safety - KS3 Computer Science Revision - BBC Bitesize https://isaaccomputerscience.org/	
Who can I contact?	Head of Department	Mark Jalowiecki - msj@forest.org.uk
	Teachers	Vinh Kieu - vk@forest.org.uk