

# LEVEL OF LEARNING THRESHOLD GRID Year 9



BOURNEMOUTH SCHOOL  
FOR GIRLS

DEPARTMENT SUBJECT: **COMPUTER SCIENCE**

Assessment area	Developing	Secure	Excellent
<b>COMPUTER SCIENCE</b>	<ul style="list-style-type: none"> <li>• Evaluate computational abstractions</li> <li>• Model state of physical systems</li> <li>• Model behaviour of real world problems.</li> <li>• Understand several key algorithms that reflect computational thinking.</li> <li>• Use at least one additional programming language (that must be textual) to solve computational problems.</li> <li>• Make use of appropriate data structures.</li> <li>• Design modular programs that use procedures or functions.</li> <li>• Understand uses of Boolean logic in programming.</li> <li>• Be able to carry out simple operations on binary numbers.</li> <li>• Understand the software components that make up computer systems.</li> <li>• Understand how instructions are stored by computer systems.</li> <li>• Understand how text can be manipulated digitally in the form of binary digits.</li> </ul>	<ul style="list-style-type: none"> <li>• Design computational abstractions</li> <li>• Model behaviour of physical systems</li> <li>• Use logical reasoning to compare the utility of alternative algorithms for the same problem</li> <li>• Develop modular programs that use procedures or functions</li> <li>• Understand uses of Boolean logic in circuits</li> <li>• Understand how computer systems components communicate with one another</li> <li>• Understand how computer systems communicate with other systems</li> <li>• Understand how instructions are executed by computer systems</li> <li>• Understand how sounds can be manipulated digitally in the form of binary digits</li> </ul>	<ul style="list-style-type: none"> <li>• Use a systematic approach to problem solving and algorithm creation representing those appropriate modelling tools</li> <li>• Explain simple algorithms in terms of their inputs, processing and outputs.</li> <li>• Determine the purpose of simple algorithms</li> <li>• Explain the efficiency of a given algorithm in relation to another that solves the same problem</li> <li>• Understand the importance of selecting and identifying the correct data types for use within problem solving</li> <li>• Understand programming concepts of: variable declaration, constant declaration, assignment, iteration, selection, subroutine (procedure/function)</li> <li>• Identify and use the correct operators within their programming</li> <li>• Be able to handle strings using simple operations</li> <li>• Explain what data compression is.</li> <li>• Understand why data may be compressed and that there are different ways to compress data</li> <li>• Be able to use a textual based programming and/or mark-up language to solve a problem to a high level.</li> </ul>

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	<ul style="list-style-type: none"> <li>• Understand how sounds can be represented digitally in the form of binary digits.</li> <li>• Understand how pictures can be manipulated digitally in the form of binary digits.</li> </ul>		
<b>INFORMATION TECHNOLOGY</b>	<ul style="list-style-type: none"> <li>• Combine multiple applications to achieve challenging goals</li> <li>• Analyse data</li> <li>• Meet the needs of known users</li> </ul>	<ul style="list-style-type: none"> <li>• Create digital artefacts for a given audience</li> <li>• Select multiple applications to achieve challenging goals</li> </ul>	<ul style="list-style-type: none"> <li>• Undertake programme of certification in standard applications</li> <li>• Identify and utilise the appropriate features of software to solve a given problem</li> </ul>
<b>DIGITAL LITERACY</b>	<ul style="list-style-type: none"> <li>• Revise digital artefacts for a given audience.</li> <li>• Attend to trustworthiness of digital artefacts.</li> <li>• Protect online identity.</li> <li>• Protect privacy</li> </ul>	<ul style="list-style-type: none"> <li>• Repurpose digital artefacts for a given audience</li> <li>• Attend to design of digital artefacts</li> <li>• Understand a range of ways to use technology securely</li> <li>• Understand a range of ways to use technology responsibly</li> </ul>	<ul style="list-style-type: none"> <li>• Be able to define the term cyber security and be able to describe the main purposes of cyber-security</li> <li>• Understand the current ethical, legal and environmental impacts and risks of digital technology on society. Where data privacy issues arise these should be considered</li> </ul>