



# CHORLTON HIGH SCHOOL: CURRICULUM

---

## CHS Curriculum Intent

**SUCCESSFUL:** Learners who gain deep and powerful knowledge in preparation for life; combining academic rigour, curiosity and creative flair.

**CREATIVE:** Learners who are imaginative, optimistic and inventive; finding their voice to become effective communicators prepared for lifelong adaptability

**HAPPY:** Learners who are confident, resilient, well-rounded citizens; they understand the world's communities and are ready to discover their place in it.

## CHS Curriculum Area Framework for Learning – Years 7-11

<b>SUBJECT</b>	Computer Science
----------------	------------------



# CHORLTON HIGH SCHOOL: CURRICULUM

Year Group	<b>10</b>					
Rationale/ Narrative	Students study a range of topics, starting with Computer Systems. The main focus for the year is in building confidence and skill levels in order to complete the OCR Programming Project in Summer term. Therefore, students will revisit programming skills regularly throughout the year (suggested at least one hour every fortnight, however during the Spring term this will be much more often).					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
KNOWLEDGE	<p><b>1.1 Systems Architecture</b></p> <ul style="list-style-type: none"> <li>- Purpose of the CPU</li> <li>- Von Neumann architecture</li> <li>- CPU components and their functions</li> <li>- FDE Cycle</li> <li>- Characteristics of the CPU</li> <li>- Embedded systems</li> </ul> <p><b>1.2 Memory</b></p> <ul style="list-style-type: none"> <li>- RAM and ROM</li> <li>- Virtual memory</li> <li>- Flash memory</li> </ul> <p><b>Programming Skills</b></p>	<p><b>1.3 Storage</b></p> <ul style="list-style-type: none"> <li>- The need for secondary storage</li> <li>- Data capacity</li> <li>- Common types of storage</li> <li>- Characteristics of storage technologies</li> </ul> <p><b>2.4 Computational Logic</b></p> <ul style="list-style-type: none"> <li>- Why data is represented in binary</li> <li>- Simple logic diagrams</li> <li>- Truth tables</li> <li>- Combining Boolean operators to two levels</li> <li>- Applying logical operators in appropriate truth tables to solve problems</li> <li>- Applying computing-related Maths</li> </ul> <p><b>Programming Skills</b></p>	<p><b>2.1 Algorithms</b></p> <ul style="list-style-type: none"> <li>- Computational thinking</li> <li>- How to produce algorithms using pseudocode and flowcharts</li> <li>- Interpret, correct or complete algorithms</li> </ul> <p><b>Programming Skills</b></p>	<p><b>2.2 Programming Techniques</b></p> <ul style="list-style-type: none"> <li>- Use of variables, constants, operators, inputs, outputs, assignments</li> <li>- Use of sequence, selection and iteration</li> <li>- Use of basic file handling operations</li> <li>- Use of records to store data</li> <li>- Use of SQL to search for data</li> <li>- Use of arrays (one and two dimensional)</li> <li>- How to use sub programs</li> <li>- Use of data types</li> <li>- Common arithmetic operators</li> <li>- Common Boolean operators</li> </ul> <p><b>2.3 Producing robust programs</b></p> <ul style="list-style-type: none"> <li>- Defensive design considerations</li> <li>- Maintainability</li> <li>- The purpose of testing</li> <li>- Types of testing</li> <li>- How to identify syntax and logic errors</li> <li>- Selecting and using suitable test data</li> </ul>	<ul style="list-style-type: none"> <li>- Extended programming practice (covering any skills that may need improvement)</li> </ul> <p><b>Programming project</b></p> <ul style="list-style-type: none"> <li>- Analysis</li> <li>- Design</li> <li>- Development</li> <li>- Testing, evaluation, and conclusions</li> </ul>	<p><b>Programming project</b></p> <ul style="list-style-type: none"> <li>- Analysis</li> <li>- Design</li> <li>- Development</li> <li>- Testing, evaluation, and conclusions</li> </ul>



# CHORLTON HIGH SCHOOL: CURRICULUM

<b>SKILLS</b>	<ul style="list-style-type: none"> <li>• Evaluation skills</li> <li>• Metacognitive practice</li> <li>• Exam technique</li> <li>• Identifying and selecting information</li> <li>• Breaking down key information</li> <li>• Programming skills</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluation skills</li> <li>• Metacognitive practice</li> <li>• Exam technique</li> <li>• Identifying and selecting information</li> <li>• Breaking down key information</li> <li>• Programming skills</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluation skills</li> <li>• Metacognitive practice</li> <li>• Identifying and selecting information</li> <li>• Breaking down key information</li> <li>• Exam technique</li> </ul> <p><b>Programming skills:</b></p> <ul style="list-style-type: none"> <li>. Identifying and using variables</li> <li>. Using operators</li> <li>. Using inputs</li> <li>. Using outputs</li> <li>. Using sequence</li> <li>. Using selection</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluation skills</li> <li>• Metacognitive practice</li> <li>• Exam technique</li> <li>• Identifying and selecting information</li> <li>• Breaking down key information</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluation skills</li> <li>• Metacognitive practice</li> <li>• Computational thinking</li> <li>• Identifying and selecting information</li> <li>• Breaking down key information</li> </ul> <p><b>Programming skills:</b></p> <ul style="list-style-type: none"> <li>. Using iteration (for loops)</li> <li>. Using iteration (while loops)</li> <li>. Using different types of data appropriately</li> <li>. Using basic string manipulation</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluation skills</li> <li>• Metacognitive practice</li> <li>• Exam technique</li> <li>• Identifying and selecting information</li> <li>• Breaking down key information</li> </ul> <p><b>Programming skills:</b></p> <ul style="list-style-type: none"> <li>. Using iteration (for loops)</li> <li>. Using iteration (while loops)</li> <li>. Using different types of data appropriately</li> <li>. Using basic string manipulation</li> </ul>
<b>ASSESSMENTS</b>	<ul style="list-style-type: none"> <li>• End of unit test: systems architecture</li> <li>• End of unit test: Memory</li> <li>• Programming task</li> </ul>	<ul style="list-style-type: none"> <li>• Progress test</li> <li>• End of unit test: computational logic</li> <li>• End of unit test: Storage</li> </ul>	<ul style="list-style-type: none"> <li>• End of unit test: algorithms</li> <li>• Exam questions: Systems architecture</li> <li>• Programming task</li> </ul>	<ul style="list-style-type: none"> <li>• Progress test</li> <li>• End of unit test: programming techniques</li> <li>• End of unit test: producing robust programs</li> </ul>	<ul style="list-style-type: none"> <li>• Exam questions: Producing robust programs</li> <li>• Exam questions: algorithms</li> <li>• Exam questions: programming techniques</li> </ul>	<ul style="list-style-type: none"> <li>• Progress test</li> <li>• Exam questions: programming techniques</li> <li>• Exam questions: algorithms</li> </ul>