Hodgson Academy

Computer Science

KS4 Curriculum Overview

Computer Science: Key Stage 4 Curriculum Overview

	Autumn Term		Spring Term		Summer Term	
	HT1	HT2	HT3	HT4	HT5	HT6
Year 10 (6hrs)	**1.1 System Architecture** 1.1.1 Architecture of the CPU 1.1.2 CPU performance 1.1.3 Embedded systems **Assessment:** End-of-topic quiz and exam-style questions	**1.2 Memory and storage** 1.2.1 Primary storage (Memory) 1.2.2 Secondary storage 1.2.3 Units 1.2.4 Data storage 1.2.5 Compression **Assessment:** End-of-unit test (1.1–1.2)	**Recap and retrieval practice for 1.1 and 1.2.** Project looking at specific computer specifications given a scenario **Assessment:** Project and retrieval quiz	**1.3 Computer networks, connections and protocols** 1.3.1 Networks and topologies 1.3.2 Types of networks, protocols and layers. **Assessment:** End-of-topic test including extended responses	**Recap and retrieval practices for 1.1 – 1.4** Practice questions and revision techniques. **Assessment:** Year 10 Paper 1 Mock Examination	**1.4 Threats to computer networks** 1.4.1 Threats to computers and Networks. 1.4.2 Identifying and preventing vulnerabilities. **Assessment:** End-of-topic assessment and cumulative Paper 1 test
	2.1 Algorithms 2.1.1 Computational thinking 2.1.2 Designing, creating and refining algorithms **2.2 Programming fundamentals** 2.2.1 Programming fundamentals 2.2.2 Data types **Assessment:** Practical programming task and quiz	**2.1 Algorithms** 2.1.3 Searching and sorting algorithms 2.2.3 Additional programming techniques (arrays) **Assessment:** Coding assessment and written algorithm test	**Paper 2 project** Program covering practical aspects of 2.1 and 2.2. **Assessment:** Create a small game program with menu structure	**2.4 Boolean Logic** 2.4.1 Boolean Logic 2.2.3 Additional programming techniques (SQL) 2.2.1 Trace tables **Assessment**: End-of-unit written assessment	**Recap and retrieval practices for 2.1 – 2.4** Practice questions and revision techniques. **Assessment:** Year 10 Paper 2 Mock Examination	**2.3 Defensive Design and testing** 2.3.1 Defensive Design 2.3.2 Testing 2.2.3 file handling **Assessment:** Practical programming assessment and cumulative Paper 2 test including written algorithms
Year 11 (4hrs)	**1.5 Software** 1.5.1 Operating systems 1.5.2 Utility software **Revisit Year 10 topics** 1.1 System Architecture 1.2 Memory and storage 1.3 Computer networks, connections and protocols 1.4 Threats to computer networks **Assessment:** Baseline assessment and software test	**Revision and gap fill for Year 11 Mock** Informed revision after mock on topics **Assessment:** Knowledge checks and exam questions and Mock exam	**1.6 Ethical, legal, cultural and environmental impacts of digital technology** 1.6.1 Ethical, legal, cultural and environmental impact **Assessment:** 6- and 8-mark extended response assessment	Exam techniques and answering 8-mark questions. Revision based on in class assessment **Assessment:** Full Paper 1 practice papers		

	Paper 2 Project Program covering practical aspects of 2.1 and 2.2. Include revision from 2.1 to 2.4 and defensive designs **Assessment:** Create a small game program with menu structure including defensive design and test plans.	**Pseudo code/OCR reference language** Exam techniques with revision identified from Mocks **Assessment:** Timed pseudocode/programming assessment	**2.5 Languages and IDE's** 2.5.1 Languages 2.5.2 The integrated Development Environment (IDE). **Assessment:** End-of-topic written assessment	Revision on exam techniques and writing answers to 6-mark programming questions **Assessment:** Full Paper 2 practice papers		