

1. Year 10 Curriculum Plan

YEAR 10	HALF TERM 1	SUBJECT Computer Science	LEARNING
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TOPIC	LEARNING OBJECTIVES	KEY VOCABULARY	LEARNING SEQUENCE	LINKED LEARNING	HOME LEARNING
.			In pupil friendly language. Headings in pupils' books should match text here.	Links to: <ul style="list-style-type: none"> Year 6 work (for Year 7 plans) Other topics Other subjects. (concise and most important links only).	
1.1 Introduction lesson – About the course	<ul style="list-style-type: none"> Understand the course structure and appreciate how you will be taught and assessed in this subject. Understand the important of the flipped classroom approach. 	CPU, Fetch-execute cycle, ALU, CU, Cache, Register, Von Neumann architecture, MAR, MDR, Program counter, Accumulator, Clock speed, Cache size, Cores, Embedded system	Introductory activities (Slides 8-10)		1.1 The purpose of the CPU: The fetch-execute cycle 1.1 Common CPU components and their function
SLR 1.1 Systems architecture					
SLR 1.1 – Lesson 1, Architecture of the CPU	<ul style="list-style-type: none"> Understand what the CPU of a computer does. Know what the registers in a CPU are. Know the stages of the fetch, execute cycle. <p style="color: red; margin-left: 20px;">KEY QUESTION: What is the “architecture” of a CPU?</p>		SLR 1.1 Workbook Complete slides 2 & 3 Programming introduction activity slide 6		1.1 Von Neumann architecture
SLR 1.1 – Lesson 2, Architecture of the CPU	<ul style="list-style-type: none"> Know what the registers in a CPU are. Know the stages of the fetch, execute cycle. 		SLR 1.1 Workbook Complete slide 4 Programming keyword word cloud activity slide 6		1.1 The common characteristics of CPUs

	<ul style="list-style-type: none"> Describe the Von Neumann architecture. Know the components of the Von Neumann architecture. <p>KEY QUESTION: What is the “architecture” of a CPU?</p>			
SLR 1.1 – Lesson 3, How common characteristics of CPUs affect their performance	<ul style="list-style-type: none"> Know what factors affect the speed of a CPU. Know the stages of the fetch, execute cycle. Begin learning to program. <p>KEY QUESTION: What factors affect the CPU performance?</p>		SLR 1.1 Workbook Complete slide 5 Begin programming	1.1 Embedded systems
SLR 1.1 – Lesson 4, Embedded systems	<ul style="list-style-type: none"> Know what is meant by the term: ‘embedded system’. Know several examples of embedded systems. <p>Understand how to program KEY QUESTION: What are embedded systems, and what are their characteristics?</p>		SLR 1.1 Workbook Complete slide 6 Programming	1.2 The need for primary storage 1.2 RAM and ROM
Dedicated independent programming	Gain experience in practical programming by using our wide variety of programming resources (Programming theory support PowerPoint, Learning tasks objectives 01-11, Problems to support the learning tasks, Programming progress checklist)		Progress with individual programming challenges	None for this lesson
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Dedicated independent programming	Gain experience in practical programming by using our wide variety of programming resources (Programming theory support PowerPoint, Learning tasks objectives 01-11, Problems to support the learning tasks, Programming progress checklist)		Progress with individual programming challenges		Revise what you have learned in unit 1.1.
SLR 1.1 – End of topic test	End of topic test		Test - SLR 1.1		None for this lesson
SLR 1.1 – Action	Action / Response lessons		Chance for students to respond to feedback, improve workbooks, correct misunderstandings		None for this lesson
SLR 1.2 Memory and storage					
SLR 1.2 – Lesson 1, RAM and ROM	<ul style="list-style-type: none"> Understand the need for primary storage Know the difference between RAM and ROM. Know the purpose of ROM in a computer system. Know the purpose of RAM in a computer system. Understand how to program. <p>KEY QUESTION: Why do computers have primary storage?</p>	<p>Slides 16-29 Primary storage, RAM, ROM, Virtual memory, Secondary storage, Optical storage, Magnetic storage, Solid state storage, Storage capacity, Storage speed, Storage portability, Storage durability, Storage reliability, Storage cost</p>	<p>SLR 1.2 Workbook (part 1) Complete slides 2-5</p> <p>Programming</p>		1.2 Virtual memory
SLR 1.2 – Lesson 2, Virtual memory	<ul style="list-style-type: none"> Understand the need for virtual memory. 		SLR 1.2 Workbook (part 1)		1.2 The need for secondary storage

	<ul style="list-style-type: none"> Understand how to program. <p>KEY QUESTION: How does virtual memory work?</p>		<p>Complete slides 6-10</p> <p>Programming</p>		1.2 Common types of storage
SLR 1.2 – Lesson 3, Common types of storage	<ul style="list-style-type: none"> Understand the need for secondary storage. Know the common types of storage. Know the characteristics of storage devices. Understand how to program. <p>KEY QUESTION: Why do computers have secondary storage?</p>		<p>SLR 1.2 Workbook (part 1)</p> <p>Complete slides 11-14</p> <p>Programming</p>		None for this lesson
SLR 1.2 – Lesson 4, Common types of storage	<ul style="list-style-type: none"> Know the characteristics of storage devices. Understand how to program. <p>KEY QUESTION: What are the differences between secondary storage devices?</p>		<p>SLR 1.2 Workbook (part 1)</p> <p>Finish slides 11-14</p> <p>Programming</p>		1.2 Suitable storage devices & storage media
SLR 1.2 – Lesson 5, Application storage	<ul style="list-style-type: none"> Understand the suitability of storage devices for given applications. Understand the advantages and disadvantages of devices based on their characteristics. Understand how to program. <p>KEY QUESTION: What features of secondary storage make devices suitable for different situations?</p>		<p>SLR 1.2 Workbook (part 1)</p> <p>Complete slides 15-17</p> <p>Programming</p>		<p>1.2 The units of data storage</p> <p>1.2 How data needs to be converted into binary to be processed by a computer</p> <p>Revise what you have learned in part 1 of this unit.</p>