YEAR 8, Computer Systems. Computer Science. (Creative Industries) Unit three of three in Year 8 rotation.

Rationale and Context of Unit:	Core curriculum content:	Tier 2 & Tier 3 vocabulary explicitly taught:
Thus far, students have covered basic computer skills, coding skills (both pseudo code and python), networks and hardware. This unit builds on knowledge and skills and draws links between hardware and programming and how a computer operates. **In Key Stage 3 students must:** - understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems - understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits - understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal] We cover the above points in this unit.	Students are taught: We look at sequences of instructions, executing programs, the function of hardware components and operating systems., logic operators, representations as binary digits and begin to look at AI. This knowledge will need to be applied if a student takes the KS4 Computer Science course. If a student is interested in a career in coding or programming, this unit will further their coding skills and introduce them to other types of coding.	Execution (2) Input/Output device (2) Cybersecurity (3) *NB. Each lesson has a key words list to accompany the students' learning and more words may be explicitly taught than the above but these are obligatory.*

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Challenge and Support:	World wide learning/ links to 21st century:	Cultural capital/ Industry/ Enrichment:
Each lesson has EDSM descriptors and there are tasks in each lesson which target HAPs.

This scheme gives students the opportunity to extend their knowledge of coding and how a computer really works. There are extension tasks for HPAs throughout the unit.

Students will be taught how to change the colours of documents. A list of key words/ word bank is available for every lesson with definitions.

Tasks are chunked with step by step instructions and the lessons powerpoints are on the google classroom. Students who need to can refer back to it.

Extra help guides are also available in both electronic and printed out formats for various pieces of software.

Writing frames / bullet points to support learners with extended writing tasks.

Students are given plenty of time (at least a week) to complete any homework tasks. They are encouraged to complete this at lunchtime or at homework club, giving them access to computers, if they do not have IT access at home.

Lessons will be further differentiated in accordance with SEND and PP passports. Seating plans will be annotated based on passports. | Each lesson has either a 'real life link' or a 'link to careers' section, depending on which one is relevant to the lesson.

Students use all sorts of technology in their lives, so we look at how technology and computers first began and what they looked like / how they were used – global issues like WW2 and the enigma machine are touched on.

We also look at famous people from Computer Science history and what they contributed to modern day computing.

Gay rights (Alan Turing) are also discussed. | Students have an opportunity to look at more types of coding which targets any budding computer programmers / coders.

Careers link on each lesson provides a prompt for students to go and research that particular career. |

To support SEND students further, scaffolding, cognitive and metacognitive strategies, explicit Instruction and flexible grouping are used, along with the aid of technology.		
Historical, Social, Moral, Spiritual, Cultural context:	**Cross curricular links/ literacy/numeracy:**	**Common misconceptions:**
We look at how technology and computers have developed through time. When discussing the history of computers / technology, Alan Turning is discussed and in turn gay rights and society's attitude to this then and now.	This unit links to CC (gay rights), Maths and Science (binary). We look at famous people from Computer Science history and what they contributed to modern day computing. Oracy opportunity to research and present a presentation about a famous Computer Scientist or about AI. Opportunities to read out aloud in class from information on lesson powerpoints.	*" I have to be good at maths to be good at Computer Science"* - You do not have to be an expert in maths to be successful in the area of CS but a good knowledge at school is helpful. This unit provides 2 more ways of coding, one which is more maths focusses than the other. Not all coding is maths. A lot of coding is very creative.

Assessment timeline:

- Skills will be assessed on a lesson by lesson basis using AB tutor to monitor students' progress with the development of their computer science skills.
- There is a quiz at the end at the end of the unit to test theoretical knowledge of file formats, software terminology etc. Plenaries after each lesson to test knowledge
- All lessons show examples of what students are aiming for
- EDSM criteria included in all lessons so students can self-assess each lesson
- Oracy task presentation – feedback given on google classroom
- Assessment on google form at end of unit

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Home learning
HMK – L2. Key words and reading comprehension
HMK – L4. Focusses on logic tables
HMK – L7: Revision for end of unit test
Further reading / watching:
• https://www.bbc.co.uk/bitesize/guides/z4p4jxs/revision/1
• https://www.bbc.co.uk/bitesize/guides/z4p4jxs/revision/2
• https://en.wikipedia.org/wiki/Alan_Turing
• https://html.com/

Feedback
Whole class feedback on HMK
Individual feedback on google classroom assignment for oracy task presentation
Google self-marking quiz at end of unit
Class discussions used regularly. Online Quizzes. Test buddy feedback (peer assessment) used in class with criteria.

Length of unit (duration indicated in lessons)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Unit: What is a Computer? (Unit three of year 8 rotation)