YEAR 7, Networks and Hardware. KS3 Computer Science (Creative Industries) Third unit of three in rotation.

Rationale and Context of Unit:	Core curriculum content:	Tier 2 & Tier 3 vocabulary explicitly taught:
Thus far, students have covered basic computer skills, and coding. This unit focusses on the applying those skills and looking at how Networks and Hardware fit in with coding. **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. This unit builds upon Computer Science knowledge learned in the coding unit.	Students are taught: Computer and Network protocols, networking hardware, the difference between wireless and wired networks, the internet (how it works and its services) and the World Wide Web. 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, programming or being an IT technician, this unit will further their coding skills and introduce them to other types of coding and show them where that fits in with hardware.	Router (3) Bandwidth (3) Spam (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.*

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 how computers form networks and the hardware required for this. 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 saved 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 their phone really connects to the internet, why sometimes this doesn't work. How we used to send messages and what it takes for data to be sent across a network. We look at how the Internet came to be.	Students have an opportunity to look at the history of communication and how this has developed over times. How we connect now is a lot different to how we used to connect. Careers link on each lesson provides a prompt for students to go and research that particular career.

Historical, Social, Moral, Spiritual, Cultural context:	Cross curricular links/ literacy/numeracy:	Common misconceptions:
To support SEND students further, scaffolding, cognitive and metacognitive strategies, explicit Instruction, memory retrieval and flexible grouping are used, along with the aid of technology.		
See previous.	Links to CC – talking about whether constant communication is good for us. Links to History – the history of communication. Opportunities to read out aloud in class from information on lesson powerpoints.	Explaining HOW Wi-fi works. How emails are sent. Students usually take these for granted and do not think about the technology behind these things and how they actually function.

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.
- EDSM criteria included in all lessons so students can self-assess each lesson
- Homeworks L2 and L4
- Assessment lesson 6

Home learning

HMKL2: Key words HMK
HMK L4: Google forms quiz
HMK L6: Revise for end of unit quiz

Further reading / watching:
- https://www.bbc.co.uk/bitesize/guides/zh4whyc/revision/1
- https://www.bbc.co.uk/bitesize/guides/zj88jty/revision/1
- https://www.bbc.co.uk/bitesize/guides/znttng8/revision/1

Feedback

Given on google classroom assignment.
End of unit quiz is self marking.

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: Networks and Hardware (Third section of lesson of CS rotation)