NHSG Key Stage 3 Unit Overview for 8S5: Cyber Security

Scheme of Learning	Topic:	
Learning outcomes	This short unit is giving students a chance to renew and consolidate the knowledge they learnt at the end of Year 7. For some classes, this will be a couple of lessons to cover any material not taught last year due to missed lessons. By the end of the unit, students should be able to use a range of basic ciphers to both encrypt and decrypt messages.	
Key Question	How can I keep my data safe from malicious entities on the internet?	
Knowledge	**Key concepts** • What is Cryptography? • Why is it used? • What are some simple, historical encryption techniques? • How are pictograms used? • How does a Rotational Cipher work? • How does the Vigenère Cipher work? • What is CyberChef? **Key Skills** Encrypting and decrypting messages using simple ciphers	**Key terminology** • Cryptography • Cipher • Plain Text • Cipher Text • Keyword • Rotational • Substitution • Code
Ongoing Assessment	Progress and understanding are monitored through lessons by the teacher and a series of exercises. Students are expected to self-evaluate their achievements in, or just after, the lesson using the provided template of key questions. They will then use homework time to secure a weak area that they have identified. Answers are expected to be in the student's own words and not paraphrased or directly copied from online resources. You will have access the resources used via SharePoint/Teams and will be expected to continue familiarising with the systems each day outside of class. Students are expected to access Computer Science resources via Teams outside of lesson time and this is monitored throughout the year.	
Key Assessment	There are two assessment periods for Year 7. These take towards the end of the Autumn term, and towards the beginning of the Summer term. Each assessment will check understanding of the units recently covered	

	as well as their sustained understanding of previous units. The self-evaluation sheets should be used as the basis of what they need to revise. These assessments will have the same number of marks across the year group, though there may be some variety in the questions depending on the progress of the individual class. They are written tests on paper and consist of three sections: Knowledge (facts), Application, Explanation. The reports are based on how each student does in comparison with the rest of the year group in these assessments.
Clear sequencing of content	Basics of cryptography: • Understanding the concept of Cryptography and it's real-world uses • Recognising the historical impact of cryptography • Learning about different types of historical ciphers This unit is used towards the CyberFirst Girls Competition which all of Year 8 take part in around January.
Links to Careers	Cryptographer/Cryptoanalyst, Security analyst, Ethical Hacker, Mathematician, Blockchain developer, embedded Systems Engineer, Cyber Intelligence Analyst, Forensic Analyst, FinTech Risk Analyst
Diversity and Inclusion	Historically sensitive discussions, such as the Enigma machine in WW2 and Alan Turing are handled with discretion. Any reference to news articles or recent events (e.g. M&S cyber-attack) are only used if it not suggesting a built-in bias against a particular ethnic or cultural group.
Additional Support	Self-Assessment RAG sheets act as knowledge organisers with key questions for each lesson SharePoint with knowledge PowerPoints Year 8 mentors available one lunchtime a week upon request, or under direction if deemed necessary
Challenge	KS3 Cyber Club National Cipher Challenge 2024 - University of Southampton Cyber Skills Live Welcome - Cyber Games UK CyberSprinters - NCSC.GOV.UK