Year 5 Computing

Autumn 2: We Are Cryptographers

Session	National. Curriculum Statement	WALT	Learning Outcomes (Success Criteria)	Resources	Vocabulary
Subject Cultural Capital = Using & Applying computing knowledge to solve problems **Differentiation** = please see the differentiation for the EXC EM & SEND (Please see SEND pupils IEPs when planning) **Minimum expectations to check for understanding during lessons** = targeted questioning / mini whiteboards/ peer talk /thumb signs **Long term memory skill development strategy** = LAST, LAST, LAST linked to the WALT **Literacy & Numeracy skills development** = ICT vocabulary bank linked to the WALT & include numeracy skills where they are linked to the WALT in the weekly planning					
On Line Safety: Pupils learn how information can be communicated in secret over open channels, including the internet, using cryptography. They learn about the public key system used to sign and encrypt content on the web and how they can check the security certificates of encrypted websites. They learn about the importance of password security for online identity and consider what makes a secure password.					
1	Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration.	To communicate information using semaphore	Children become familiar with semaphore and understand how people sent messages before telephone and internet were invented.	Scratch Laptops/desktops	Semaphore Code Messages transmitted
2	Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration.	To communicate messages using Morse Code	Children practise sending and receiving messages using Morse code. Children begin to understand how semaphore and Morse code have limitations.	Scratch Laptops/desktops	Message Morse code Semaphore binary

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3	Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.	To use the Caesar copher to create and crack codes	Children understand what a cypher is and write and translate messages. Children can explain the algorithm used to solve a cypher	Scratch Laptops/desktops	Transmit Message Semaphore Morse code Cipher Encrypt Decrypt encoded
4	Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.	To develop a knowledge and use of ciphers to include substitution ciphers and frequency analysis	Children can solve a substitution cypher.	Scratch Laptops/desktops	Cypher Message Encode
5	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	To learn the importance of passwords for online security	Children understand the importance of passwords and experiment with password guessing script in Scratch.	Scratch Laptops/desktops	Online security
6	Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	To understand how passwords are kept secure online and learn about encrypted websites	Children understand how passwords are kept secure online.	Scratch Laptops/desktops	Transmitted Message code