

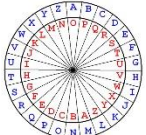
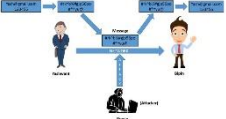
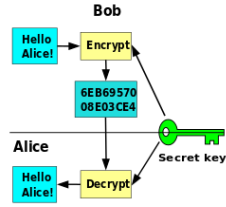
We are cryptographers

Prior Knowledge

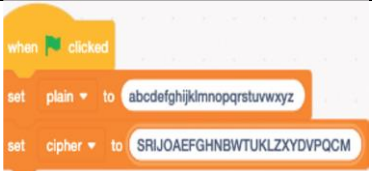
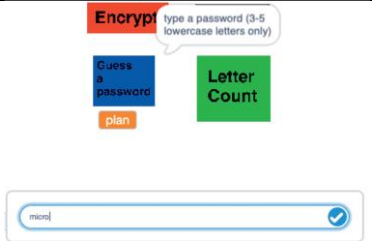
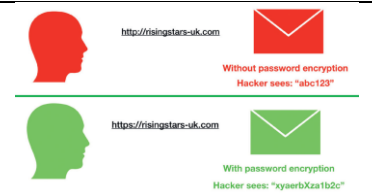
In **Unit 1.1: We are treasure hunters** you programmed Beebots. In **Unit 1.5: We are rhythmic** and **Unit 2.1: We are astronauts** you programmed in ScratchJr. In **Unit 2.2: We are games testers** you were introduced to some Scratch games.

In Key Stage 2 you developed your Scratch programming skills in **Unit 3.1: We are programmers** and **Unit 4.1: We are software developers**.

Key Vocabulary:

cipher		an agreed scheme (algorithm) for encrypting or decrypting a message	encrypt		to convert a readable message into an encrypted form so that it cannot be read by those without the key
codes		ways of changing the way information is represented	message		information to be transmitted from one person (or system) to another
cryptanalysis		the process of decrypting an encrypted message without prior access to the encryption key	morse code		a simple code for converting letters and numbers into patterns of short and long electrical pulses
cryptography		the science of keeping communication and information secret	semaphore		a simple code for converting letters and numbers into different positions of two flags, one held in each hand
decrypt		to convert an encrypted message into readable text	transmit		to communicate a message over a long distance
encode		to change the form of a message into an agreed code			

Key learning: How and why is data encrypted?

 Session 1: Practising semaphore	What is semaphore? How is semaphore used over long distances?	 Session 4: Programming a random substitution cipher	How can the Caesar cipher be made more secure?
 Session 2: Modifying the torch to send Morse code	What is morse code? Why do certain letters only consist of a single dot or dash?	 Session 5: Exploring a password-guessing program in Scratch	Why are passwords used online? How to make a password more secure?
 Session 3: Exploring an encrypt code in Scratch	What is the Caesar cipher?	 Session 6: Learning about security on the Internet	How is information securely transmitted via the internet?

Key Applications (apps)



Next Steps

In **Unit 5.4: We are web developers** you will learn more on how the Internet makes communication possible and the applications of cryptography.

In **Unit 6.2: We are computational thinkers** you will learn standard algorithms of computer science and maths.