



**Year 5 – Spring Term 1**  
**We Are Cryptographers**  
**Computing**



In this unit, children will learn more about communicating information securely through an introduction to **cryptography** (the science of keeping communication and information secret).

**Digital Literacy**

**Prior Knowledge**

Children will already know about the different ways people can use technology to communicate with one another.

**Can you crack the codes?**

Crack the codes below to reveal the interesting facts.

**Semaphore**

4 3 2 1  
 1 2 3 4 5 6 7 8  
 1 2 3 4 5 6 7 8  
 1 2 3 4 5 6 7 8  
 1 2 3 4 5 6 7 8  
 1 2 3 4 5 6 7 8  
 1 2 3 4 5 6 7 8

**Morse code**

..- / ... / ..- - /  
 - - - / - - - / - - - / - - - /  
 - / . - / - - / ..- /  
 - - - / . - / - /  
 ..- / ..- / - /  
 ..- / . - / ..- / - / ..- /  
 - / ..- / . - / - / - /  
 - - / . - / - /

**Caesar cipher**

ESP HZCO  
 OTYZDLFC NZXPD  
 QCZX ESP RCPPV  
 WLYRFLRP LYO  
 XPLYD EPCCTMWP  
 WTKLCO.

**Computing Key Vocabulary**

<b>Binary Code</b>	Binary is the language computers use. It is a series of 1s and 0s and is also used in mathematics.
<b>Cipher</b>	A cipher is an algorithm for performing encryption or decryption.
<b>Cryptography</b>	The science of keeping communication and information secret.
<b>Cybersecurity</b>	the protection of computer systems and information from harm, theft, and unauthorized use.
<b>Decrypt</b>	To convert an encrypted message into plain text so that it can be read and understood.
<b>Encrypt</b>	To convert a plain, readable message into an encrypted form so that it cannot be read by those without a secret key.
<b>Morse Code</b>	A simple code for converting letters and numbers into patterns of short and long electrical pulses.
<b>Password</b>	A secret word or phrase that must be used to gain entry.
<b>Semaphore</b>	A simple code for converting letters and numbers into different positions of two flags, one held in each hand.



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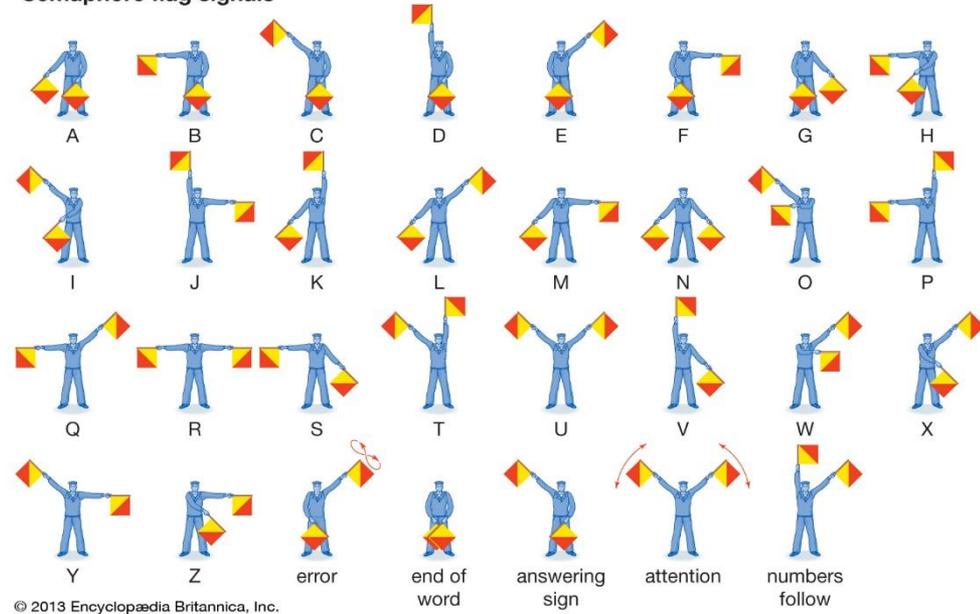
This half term we will be using...	
Hardware	Software/Apps
WinBooks Semaphore flags	Morse code translator

### Binary Letters

A	01000001	N	01001110
B	01000010	O	01001111
C	01000011	P	01010000
D	01000100	Q	01010001
E	01000101	R	01010010
F	01000110	S	01010011
G	01000111	T	01010100
H	01001000	U	01010101
I	01001001	V	01010110
J	01001010	W	01010111
K	01001011	X	01011000
L	01001100	Y	01011001
M	01001101	Z	01011010



### Semaphore flag signals



### Morse Code

A	● -	J	● - - -	S	● ● ●
B	- ● ● ●	K	- ● -	T	-
C	- ● - ●	L	● - ● ●	U	● ● -
D	- ● ●	M	- -	V	● ● ● -
E	●	N	- ●	W	● - -
F	● ● - ●	O	- - -	X	- ● ● -
G	- - ●	P	● - - ●	Y	- ● - -
H	● ● ● ●	Q	- - ● -	Z	- - ● ●
I	● ●	R	● - ●		

**E-safety:** To explore password security and understand the need to use complex passwords and to keep them secure.  
To have some understanding of how encryption works on the web.