### Languages

You've learnt a language at school right? One that is different to English? It might use the same alphabet, it might not. As you've learnt more about the language, you've learnt to recognise different words and sounds.

### Computer languages

Now, imagine computers have their own language, but we don't call it a language, we call it binary code.

### Binary Code

Binary code is what we call the language that is spoken by computers. And it's not made up of letters like we use in the English language, it's made up of just two digits - 0 and 1's. Together those 0 and 1's can make up different combinations. Just like the English language, the same letters can make up different words. How many words can you make from the letters: N L F I T Y T?

It's called binary because bi means 2! Binary code only uses two numbers. On any device you use, when you press a character (a letter or symbol), the digital system doesn't recognise it as a letter or symbol, it recognizes it as a sequence of 0 and 1's. The sequence of 0 and 1's will be made up of 8 bits.

### Bit

The word 'bit' is a combination of the word binary and digit. Every single letter you have read on this page is all made up of 0 and 1's when this document was typed up. If the combination for 'A' is 01000001, think about all the other combinations that have been used to create this document. Every single document, text, image and even sound you have access to through a digital device is all stored as 0 and 1's. That's a lot of bits!

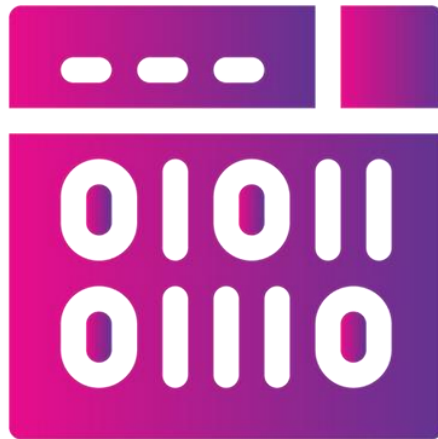### Video Resource

*Click on the image to watch the video*
This video provides you with information on how all the components work together and how binary code is part of the digital system.
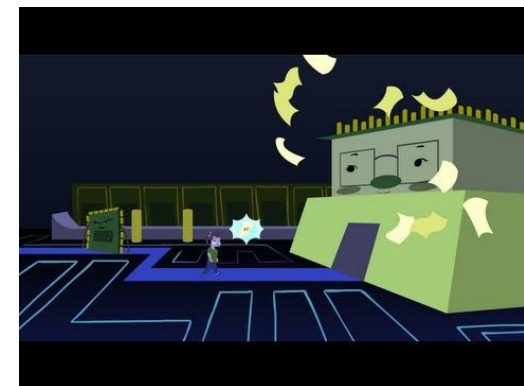


Video Source: TedEd

# BINARY CODE

Digital systems use two numbers: 0s and 1s

The combination of 0 and 1's make up computer data.

Computers will recognise the 'a' key as 01100001.

Identify binary code as the representation of data used by a digital system.

## HUMAN VS COMPUTER

A    01000001

B    01000010

C    01000011

# A-Z OF BINARY CODE

| Alphabet | Binary Code | Alphabet | Binary Code |
|---|---|---|---|
| A | 01000001 | a | 01100001 |
| B | 01000010 | b | 01100010 |
| C | 01000011 | c | 01100011 |
| D | 01000100 | d | 01100100 |
| E | 01000101 | e | 01100101 |
| F | 01000110 | f | 01100110 |
| G | 01000111 | g | 01100111 |
| H | 01001000 | h | 01101000 |
| I | 01001001 | i | 01101001 |
| J | 01001010 | j | 01101010 |
| K | 01001011 | k | 01101011 |
| L | 01001100 | l | 01101100 |
| M | 01001101 | m | 01101101 |
| N | 01001110 | n | 01101110 |
| O | 01001111 | o | 01101111 |
| P | 01010000 | p | 01110000 |
| Q | 01010001 | q | 01110001 |
| R | 01010010 | r | 01110010 |
| S | 01010011 | s | 01110011 |
| T | 01010100 | t | 01110100 |
| U | 01010101 | u | 01110101 |
| V | 01010110 | v | 01110110 |
| W | 01010111 | w | 01110111 |
| X | 01011000 | x | 01111000 |
| Y | 01011001 | y | 01111001 |
| Z | 01011010 | z | 01111010 |