

Kit's Computing Challenge: Mastering Binary

Learning objective: To understand how computers represent data using binary code and to convert between denary and binary numbers up to 8 bits.

Use these flashcards to test your knowledge of binary code. Kit the fox suggests looking for patterns in the place values to help you solve the puzzles!

What is Binary?

A number system that uses only two digits, 0 and 1, to represent all data in a computer.

What does the term 'Bit' stand for?

A Binary Digit, which is the smallest unit of data in a computer.

How many bits are in one Byte?

8 bits.

What is our standard number system (0-9) called?

Denary (or Base-10).

In binary, what does the digit '1' represent?

The 'on' state or that the value is present.

In binary, what does the digit '0' represent?

The 'off' state or that the value is absent.

What are the place values for a 4-bit binary number?

8, 4, 2, 1.

Convert the denary number 5 into binary.

0101 (4 + 1).

Convert the binary number 1010 into denary.

10 (8 + 0 + 2 + 0).

Why do computers use binary instead of our standard numbers?

Computers use electrical circuits that are either on or off, which perfectly matches the 1 and 0 of binary.

What is the largest denary number you can represent with 8 bits?

255.

Explain why binary is known as a 'Base-2' system.

Because it only uses two digits (0 and 1) and each place value increases by a power of 2.