Binary: The Secret Language of Computers

About 15 minutes. Grown-up tip: Ask your child to imagine the lights in your house as binary: are they 1 (on) or 0 (off)?

Kit the fox uses binary to solve complex puzzles! Think of binary as a light switch: 1 means 'ON' and 0 means 'OFF'. To convert a number, we use powers of 2. Example: The number 5 is '101' (1x4 + 0x2 + 1x1).

- **Binary is a base-2 system, meaning it only uses two digits: 0 and 1.**
- **A single binary digit is known as a 'bit', which is the smallest unit of data.**
- **Computers use electricity to represent these digits; high voltage acts as 1, and low voltage acts as 0.**
- **A group of eight bits is called a 'byte', which is enough data to store one single letter or character.**
- **We use the 'denary' system (base-10) for counting in everyday life, which uses digits from 0 to 9.**

> *Did you know? Did you know? Every photo, song, and video on your tablet is actually just a long, long string of millions of 1s and 0s hidden deep inside the hardware!*

Key vocabulary: Binary · Bit · Byte · Denary · Base-2