



Prior Learning	
Children have used Scratch based-programming in LKS2.	
Key vocabulary for this unit	
8-bit binary Addition ASCII Binary code Boolean Byte CPU Data Data transmission Decimal numbers Discovery Distance Hexadecimal Input	Mars Rover The Moon Numerical data Output Planet Radio signal RAM Scientist Sequence Signal Simulation Space Subtraction
Learning Sequence	
1. Mars Rover	<ul style="list-style-type: none"> To identify how and why data is collected from space
2. Binary code	<ul style="list-style-type: none"> To read and calculate numbers using binary code
3. Computer architecture	<ul style="list-style-type: none"> To identify the computer architecture of the Mars Rovers
4. Using binary - numbers	<ul style="list-style-type: none"> To use simple operations to calculate bit patterns
5. Using binary – text	<ul style="list-style-type: none"> To represent binary as text.
Assessment milestones	

ICT Skills:

- Learning that a separate computer can program external devices.
- Recognising how the size of RAM affects the processing of data.
- Learning the vocabulary associated with data: data and transmit.
- Recognising that computers transfer data in binary and understanding simple binary addition.
- Relating binary signals (Boolean) to the simple character-based language, ASCII.
- Learning that messages can be sent by binary code, reading binary up to eight characters and carrying out binary calculations.
- Understanding how data is collected in remote or dangerous places.
- Understanding how data might be used to tell us about a location.
- Learn about different forms of communication that have developed with the use of technology.

ICT Knowledge:

To know:

- Mars Rover is a motor vehicle that collects data from space by taking photos and examining rock samples.
- What numbers using binary code look like and be able to identify how messages can be sent in this format.
- RAM is Random Access Memory and acts as the computer's working memory.
- What simple operations can be used to calculate bit patterns.