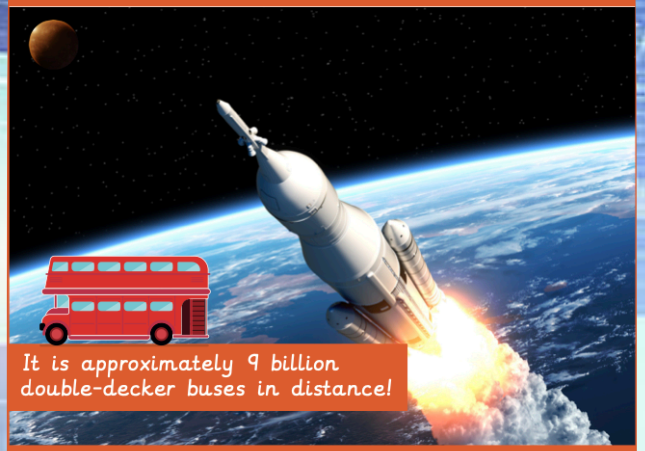
Year 5 - Mars Rover 1 - HT2

Key Vocabulary

Binary code	A code used in computers, based around the binary values of 0 and 1.
Data	Information used for a specific purpose or investigation.
Data transmission	The movement of information from one or more points to another.
Discovery	When something is intentionally or unintentionally found.
Distance	The amount of space between two places or objects.
Input	Information sent to a computer by an input device such as a keyboard or mouse for processing.
Mars Rover	A robotic vehicle, that explores, investigates and returns data about the terrain on Mars.
Moon	Orbits round planet Earth and is Earth's only natural satellite.
Numerical data	Information that is based on numbers and digits.
Output	Information or data that is sent by the computer to an output device such as a printer or speakers.
Planet	A large natural object that orbits around a star.
Radio signal	A radio wave that is sent or received to somewhere.
Scientist	A person who studies within the fields of Science, such as Physics, Biology and Chemistry.
Sequence	A set order or pattern for something to follow.
Signal	A voltage, current or electromagnetic wave that is either sent or obtained.
Computer simulation	Computer generated imitation of something such as a program test or product prototype.
Space (astronomy)	A vast area around and beyond planet Earth, which is not inhabited.

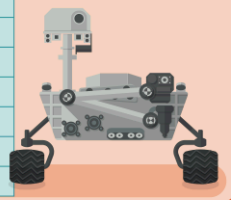
The Mars Rover had to travel 350 million miles (approx) to get to Mars, it took eight and a half months.



Binary:

When a robot thinks independently, it needs to be able to calculate a range of data. All decisions carried out by a robot, or any computer, are done in binary - including the Mars Rover.

Binary value	Decimal value
0 0 0 0	0 zero
0 0 0 1	1 one
0 0 1 0	2 two
0 0 1 1	3 three
0 1 0 0	4 four
0 1 0 1	5 five
0 1 1 0	6 six
0 1 1 1	7 seven
1 0 0 0	8 eight
1 0 0 1	9 nine
1 0 1 0	10 ten



To know statements

To know statements	✓ ✗
I know some of the types of data which the Mars Rover could collect (e.g., photos). Explain how the Mars Rover transmits the data back to Earth (radio waves) and the challenge involved in this (the great distance). I can Research a comparative fact about the distance to Mars.	
I know how to read any number in binary, up to eight bits. I can identify binary as the most basic way computers communicate. I nuderstand each one or zero is referred to as a bit	
I know some input, processing and output on the Mars Rovers. I can explain how the size of RAM affects the processing of data.	
I know how to read binary numbers and grasping the concept of binary addition.	
I know binary numbers to four bits, relating binary signals (Boolean) to a simple character based language, ASCII	

What can you remember from previous units?

How can weather data be collected?
How did you access weather forecasts on the internet?

Anything else you have learnt? What have you enjoyed?