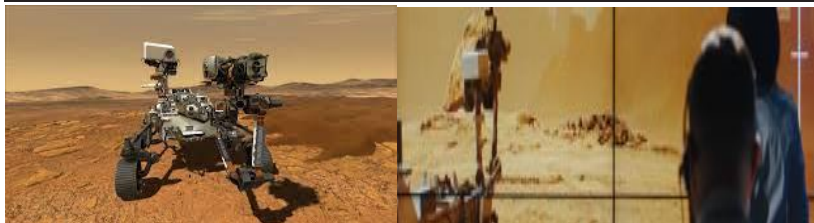




Key Vocabulary

Binary code	A code used in computers, based around the binary values of 0 and 1.
Data transmission	The movement of information from one or more points to another.
Mars Rover	A robotic vehicle, that explores, investigates and returns data about the terrain on Mars.
input	Information sent to a computer by an input device such as a keyboard or mouse for processing.
output	Information or data that is sent by the computer to an output device such as a printer or speakers.
Radio signal	A radio wave that is sent or received to somewhere.
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.
distance	The amount of space between two places or objects.



Prior Learning – sticky Knowledge I have.

A database is a collection of data stored in a logical, structured and orderly manner. Computer databases can be useful for sorting and filtering data. Different visual representations of data can be made on a computer. Sorting and filtering databases makes it easy retrieve information. Computers can create graphs and chart that make it easier to understand data. People can edit photos and videos using film editing software. Transitions and text can be added to video. Computers can use different forms of input to sense the world around them so that they can record and respond to data ('sensor data').

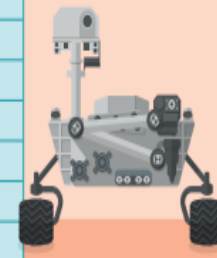
What I will learn – new sticky knowledge.

Mars Rover is a motor vehicle that collects data from space by taking photos and examining samples of rock. All computers and robots use binary code to calculate and make decisions. Binary code uses numbers to send messages and information. RAM is Random Access Memory and acts as the computer's working memory. Simple operations can be used to calculate bit patterns. Bit patterns represent images as pixels. Data for digital images can be compressed.

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



The Mars Rover had to travel 380,000km to get to Mars, it took eight and a half months.



It is approximately 31,666,666 double-decker buses in distance!

Challenge

What is the purpose of the Mars Rover and why is it important to scientists?

- We are Aspirational Leaders: *Responsibility and respect *Creativity, innovation and curiosity *Confidence and resilience



Key Vocabulary

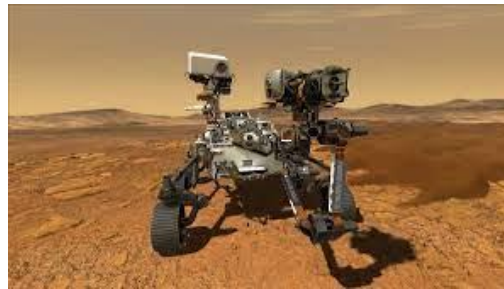
How well do I understand our key vocabulary?



Binary code			
Data transmission			
Mars Rover			
input			
output			
Radio signal			
sequence			
signal			
Computer simulation			
distance			

What sticky knowledge can I remember from my learning?

Blank area for students to write their sticky knowledge.



Challenge

What is the purpose of the Mars Rover and why is it important to scientists?

