# Y5 Knowledge Organiser – Skills showcase: Mars Rover 2

| Key vocabulary | |
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| **Algorithm** | A sequence of instructions which, when followed, solve a problem. |
| **Data** | Information used for a specific purpose or investigation. |
| **Binary image** | An image where the pixels are made up of only two colours, such as black and white. |
| **Bit** | One unit of data, that either has a value 1 or 0. A bit is also known as a 'binary digit'. |
| **Bit pattern** | A sequence of binary digits. |
| **CAD** | Computer-aided design, software used to create graphics, diagrams or other visuals. |
| **Compression file** | Taking single or multiple files and reducing their file size to take up less digital storage space. |
| **CPU** | Central Processing Units are the brains of a computer and deal with all of the data it receives from input and output devices, as well as programs ran within the computer. |
| **Data** | Information used for a specific purpose or investigation. |
| **Digital image** | Formed by a series of programmed pixels. |
| **Encode** | To convert something into a different code, for someone or something else to understand it. |
| **Image** | A picture of people or objects |
| **JPEG** | Joint Photographic Experts Group. A popular image compression format. |
| **Memory computer** | Any hardware device that is able to store data or information. |
| **Operating system** | The base software needed on a computer for it to manage basic commands, hardware and software and provide a user-friendly interface. |
| **Pixels** | A screen is made up of a grid of pixels, each pixel is programmed to display a certain colour which when put together form an image. |
| **RGB** | Red, Green, Blue. A colour mode, that uses these three hues combined to create a spectrum of colours. |

**Key Facts**


| What I have learnt before | What I am learning now | What I will learn next |
|---|---|---|
| • Learning how to operate a camera or tablet to take photos and videos.<br>• Learning how to explore and tinker with hardware to find out how it works.<br>• Using software to work collaboratively with others.<br>• Understanding that websites and videos are files that are shared from one computer to another.<br>• Learning how data is transferred. | • Independently learning how to use 3D design software package TinkerCAD.<br>• Creating and editing sound recordings for a specific purpose.<br>• Creating and editing videos, adding multiple elements: music, voiceover, sound, text and transitions.<br>• Using design software TinkerCAD to design a product.<br>• Identify ways to improve and edit programs, videos, images etc.<br>• Learning how the data for digital images can be compressed. | • Using logical thinking to explore software more independently, making predictions based on their previous experience, iterating ideas and testing continuously.<br>• Identify ways to improve and edit programs, videos, images etc.<br>• Using search and word processing skills to create a presentation.<br>• Using software programme Sonic Pi/Scratch to create music.<br>• Using video editing software to animate.<br>• Understanding that computer networks provide multiple services. |