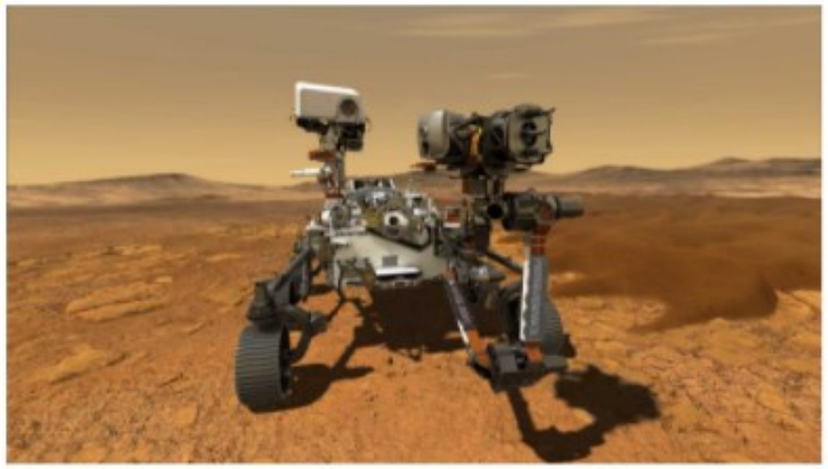
Space Roamers



Explore the **technology** and scientific **designs** that were undertaken to create the Mars Rover - Curiosity. Develop your own *design engineer* skills and **design** your own robot to **explore** a planet in our solar system.

What I already know...

How to create a range of designs that meet a **design brief** and **specifications.** *(Y3 and Y4)*

How to draw a **final design** from 3 different **angles**. *(Y3 torch design)*

To include a **zoom** element to show detail in a **final design.** *(Y4 Rags to Riches - clothing)*

I will learn...

-how to use **research** in science and existing **technology** to create a **specification**.

-how to use **CAD** (**C**omputer-**A**ided **D**esign) to create a **3D** final design.

-to **evaluate** designs to ensure they are **fit for purpose.**

Key Vocabulary:

Specification **CAD** **3D** **Rotation** **Evaluate**

Our Personal Skills:

To be curious

To reflect

Year 5 **Space Roamers —**Autumn 1 Project

Topic: CSI Shirley

Year 5 step into the universe beyond our world and learn about space and the solar system. Becoming experts in one planet, they use their science expertise to design a space roamer which will gather in depth information about a planet in the solar system.

HOOK: Astrodome—Exploring the stars

OUTCOME: Robot Design presentations

Driving Subject: DT—Computer Aided Design

-**Research—**children will use research (science and reading around Curiosity Mars Rover) to support them creating their own design *specifications*.

-**Design—** children will *design* a Space Roamer which meets *specifications* for the chosen planet they would like to explore.

-Evaluation—children will learn to reflect on *initial* ideas and make decisions on what needs to be included in their *final design.*

-**Design—**CAD—using TinkerCAD, children will develop their computing skills and create a *final design* of a roamer for a particular planet.

Applied Literacy:

Science Investigation — how to write a science experiment report.

Astronaut qualities information section.
Naming speech—children write a speech explaining

Applied Mathematics:

Measure– accurate measuring of length for relative distance in the Solar System
3D shape—unpicking a robot to its 3D components in readiness to

Curriculum Links:

Science — Earth and space

-be able to design the *Sun*, *Earth* and *Moon* as *spherical bodies* and the movement of the *moon* relative to the *Earth*.

-to describe the movement of the Earth, and other *planets*, relative to the *Sun* in the *solar system*.

-Explore the idea that the Earth's *rotation* explains *day* and *night* and will **investigate** the apparent movement of the sun across the sky.

Reading—Retrieval - children develop specific retrieval skills focused on the design of a robot when reading the text: CURIOSITY: The Story of a Mars Rover.

Music— Exploration of Holst's 'The Planets'. Children listen and respond to music representing a planet. As composers, they create their own composition creating *atmosphere* and a clear *structure.*

Pupil Premium Enrichment

Children will get extra teaching around the use of CAD (TinkerCAD) and use the programme to build a TinkerCAD house.

SMSC/British Values:

Cultural—children discuss and learn from the beliefs of scientists of the past. They discover how science and questioning has shaped peoples understanding of the universe.

Community links/Enterprise/ Experiences:

Astrodome experience—children are taken on a journey through the stars in an astrodome at school.
Lessons in the astrodome