

# SCIENCE

## Is There Life on Mars?

YEAR 5



SAMPLE  
LESSON  
PLAN

Get ready for your next field trip...  
to Mars!

National Curriculum Science Year 5: Earth and Space

*Students should be taught:*

- › to describe the movement of the Earth, and other planets, relative to the Sun in the solar system
- › to describe the movement of the Moon relative to the Earth
- › to describe the Sun, Earth and Moon as approximately spherical bodies
- › to use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky
- › to explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object

### Before Your Trip to Mars:

Establish what the class already know about the solar system. Discuss the Mars One mission. Why do we want to find out more about the planet? What do they know about Mars rovers? Imagine what it would be like to go there. Discuss these points and share ideas with the class.

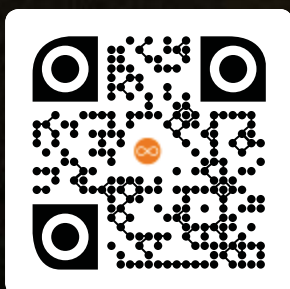
### Immersive Experience

Allow students time to explore the surface of Mars on their own first, making sure that they are in a safe position. After a minute or so of independent exploration, turn the headset screens off using your teacher dashboard to bring students back into the room. Collect student ideas about points of note, then dive back in, making sure you draw attention to:

- › The colour of the surface. What may give it its reddish hue?
- › What information should the Mars rover collect?

Space Theme

Look for this icon



### Subject

### Area of Study

SCIENCE

EARTH AND SPACE

Design and Technology

Design and make

English

Visual literacy; narrative

Mathematics

Place value

Art

Great artists; mastery of techniques

Computing

Design, write and debug a program

Music

Great composers; improvise and compose

## After the ClassVR Session:

Was there anything unexpected? What clues were there that this was not a place on Earth? What questions do you still have about the planet? Share and note down ideas and questions to use further into the topic.

### Follow-Up Activities

- › Research what Mars' atmosphere is like in comparison to Earth. Use this to help decide which objects you would need to take with you on a trip to Mars. Justify the reasoning behind each item using scientific facts or theories.
- › Compare the different orbital times, rotational times, distance from the Sun etc. of Earth and Mars. Use different sized sports balls to recreate the movement of the Sun, the planets and some moons in our solar system. Use this to help understand the reasons behind varying day length etc.
- › Investigate and research our understanding of gravity. Explore the question 'Would I be heavier on Mars?' Students could create Plasticine models of Earth and Mars to show their relative mass. They can use this to help their understanding of why they would weigh less on Mars than on Earth.

## Links Across the Curriculum



### DESIGN AND TECHNOLOGY

*Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors].*

Research the purpose of Mars rovers. What do they need to be able to do? Get students to design and create their own moving Mars rover using their understanding of the planet as well as key design features that they will need to integrate into their project.



### ENGLISH

*Draft and write by describing settings, characters and atmosphere and integrating dialogue to convey character and advance the action.*

Watch brief clips of WALL-E to discuss how he might be feeling as a robot on his own. How can you tell how he is feeling? Students to create their own stop-motion animation with a Mars rover as their central character. Focus on conveying emotion through facial expressions, sound and movements rather than dialogue.



### MATHEMATICS

*Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit.*

Find out facts relating to the planets e.g. Distance from the Sun; mass; gravity; orbital period; length of day etc. and order these in different ways using understanding of place value. Apply this learning within Science to understand the context of these numbers.



### ART

*Learn about great artists, architects and designers in history; improve mastery of art and design techniques.*

Compare 'New Moon' by Camille Chew to real photos of the moon. What effect has been created? Why does an artist not always create a perfect likeness of an object? What might the different elements represent? How can you incorporate what you know about Mars into a piece of art? Create a sculpture or painting of the planet using a range of techniques.



### COMPUTING

*Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems.*

On Scratch, J2Code or a similar program, use coding to create a simple maze game set on Mars for Curiosity to navigate.



### MUSIC

*Appreciate and understand a wide range of high-quality live and recorded music drawn from different traditions and from great composers and musicians.*

Listen to Holst's The Planets – Mars – The Bringer of War. Link to learning of Roman Mythology and explore the character of Mars. Why might this planet have been named after him? How does the piece of music help create the image of this character?