

# SCIENCE

## Is There Life on Mars?

AGE 10–12



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

#### ▶ Learning Areas

- › Describing the movement of the Earth, Moon and Sun
- › Using the idea of the Earth's rotation to explain day and night
- › Understanding how gravity acts on Earth

#### ▶ 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 scene on their own first. 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 Collection

Look for this icon



#### Subject

SCIENCE

Design and Technology

English Language

Mathematics

Art

Computing

Music

#### Area of Study

EARTH AND SPACE

Design and make

Visual literacy; narrative

Place value

Great artists; mastery of techniques

Design, write and debug a program

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 models of Earth and Mars to show their relative mass, using modelling clay or dough. 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 – *Designing Mechanical Systems*

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 LANGUAGE – *Discussing Characters*

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 – *Place Value*

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 – *Artists and 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 – *Writing Simple Programs*

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



### MUSIC – *Appreciating Great Composers*

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?.





## SCIENCE

### The Heart

AGE 10-12

#### Learning Focus

Name the parts of the human circulatory system and their functions.

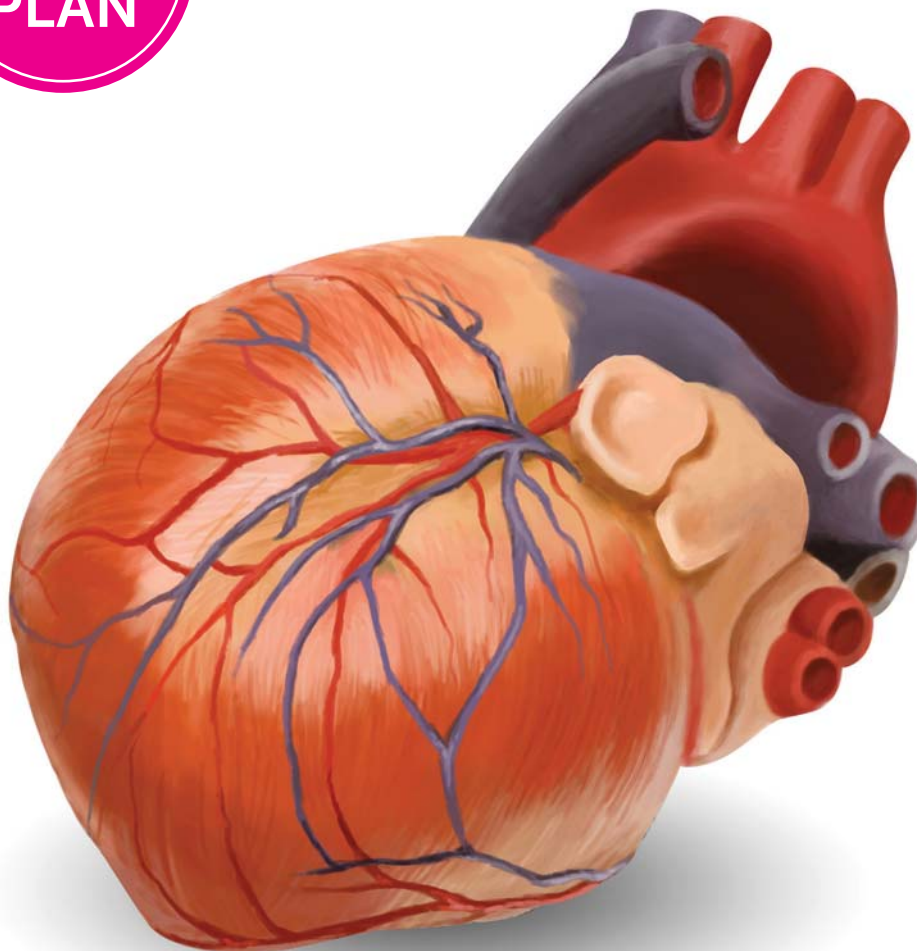
#### Key Questions

- > What are the differences between the left and the right side of the heart?
- > Can you identify the four chambers?
- > Which blood vessels are veins and which are arteries? What is the difference between the two?
- > What is happening with each heartbeat?
- > How can you check how fast your heart rate is?
- > What would change if the human started doing vigorous exercise?
- > What do you notice about your own heart rate when you start to run on the spot?

VIEW ME WITH THE ARC APP!



SAMPLE  
LESSON  
PLAN





**SCIENCE**

The Heart



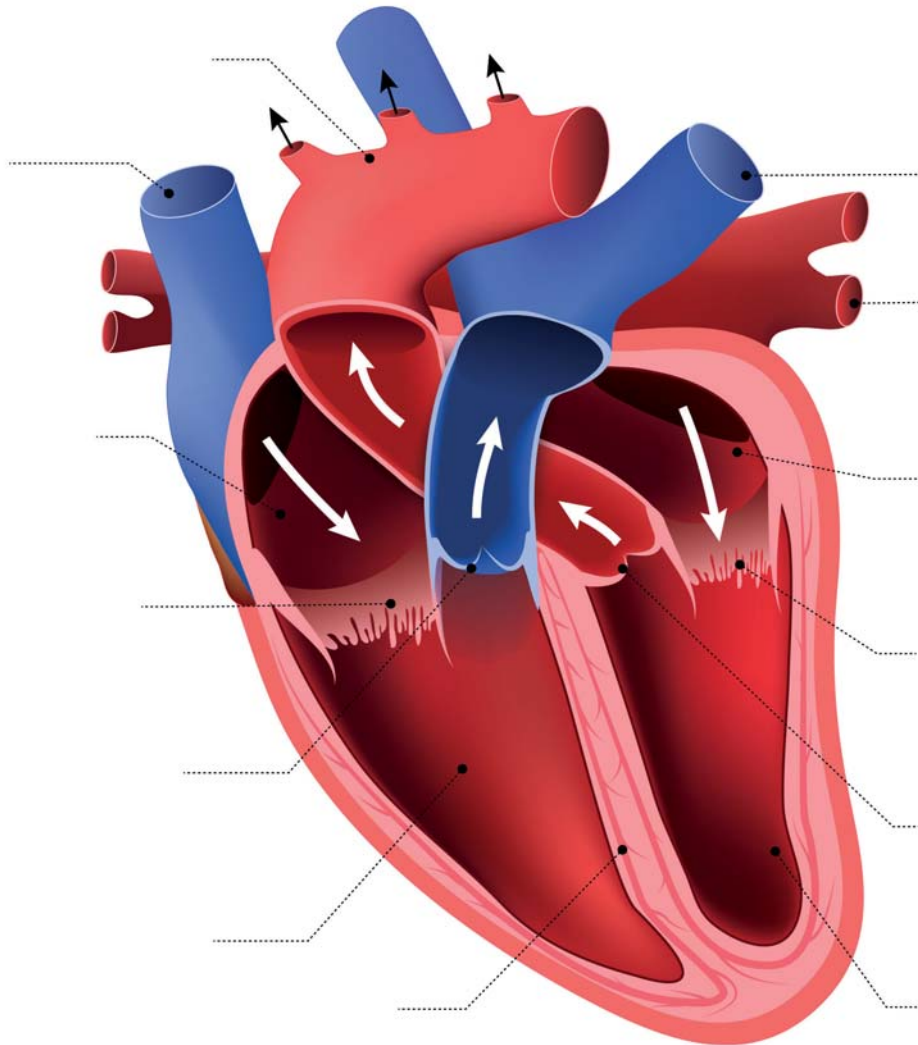
**Follow-Up Activity**

Label the chambers on the heart diagram as well as the surrounding blood vessels.

Why not challenge yourself and label where in the body the oxygenated or deoxygenated blood is coming from or going to?

**Name** .....

**Date** .....



Aorta

Aortic Valve

Left Atrium

Left Ventricle

Mitral Valve

Pulmonary Artery

Pulmonary Valve

Pulmonary Vein

Right Atrium

Right Ventricle

Septum

Superior Vena Cava

Tricuspid Valve