Lego Mars Rover

In 2022, the Rosalind Franklin robotic Mars rover will blast off from Earth and head to the Red Planet to search for signs of life.
It is a collaboration between the European Space Agency and the Russian Roscosmos State Corporation. Hundreds of scientists and engineers from over 20 countries have worked on this rover – it really shows what amazing things can be achieved when people work together!

The rover will be equipped with a panoramic camera, drill and on-board sensors used to try and detect signs of preserved organic material. Finding this would suggest that very simple life might have existed on Mars in the past.

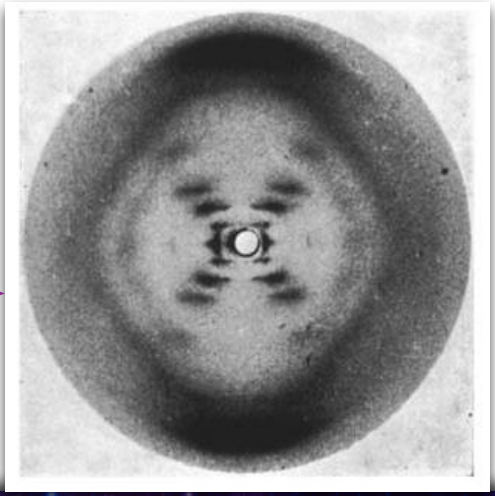
A prototype of the rover being tested in the Atacama Desert
Image credit: By ESO/G. Hudepohl via Wikimedia Commons

Rosalind Franklin

The 2022 Mars Rover is named after Rosalind Franklin, an English chemist who was central to the understanding of the structure of DNA.

After graduating from Cambridge University, Rosalind Franklin worked as a research chemist in the British Coal Utilisation Research Association. After the Second World War, Franklin moved to Paris where she became an expert in the technique of X-ray crystallography – using X-rays to determine how the atoms and molecules that make up crystals are structured.

Franklin used this knowledge when she moved to London to join the team studying DNA. In May 1952, she captured the now-famous 'Photograph 51' which led to the understanding of the structure of DNA we now have.



Rosalind Franklin's discovery was monumental in our understanding of life on Earth. The decision was made to name the 2022 Rover after her to pay tribute to one of the most important discoveries of the 20th century, and to the brilliant brain behind it.

Activity Instructions

Your challenge is to design and build your own Mars Rover out of LEGO.

There are lots of things to think about:

- How will it land on Mars?
- How will it move around the surface?
- How will it be powered?
- How will it communicate with Earth?
- How will it search for life?

When you've finished your creation, please share it with us on social media using #DynamicEarthOnline. We can't wait to see them!

Bonus Activity – Create a Stop Motion Animation

Making a stop motion animation is a great way to bring your LEGO Mars Rover to life.
What you need:

- Phone or tablet
- 'Stop Motion Studio' app (it's free!)
- LEGO model to animate

Stop motion is a technique where you take a series of photographs and make a small change between each photograph. Then, when these photos are played back quickly, the small changes add up and create something really cool! Entire movies have been created using stop motion, including Wallace and Gromit.

Make sure you leave your phone/tablet somewhere stable. You could try propping it up against a book.

Then open the 'Stop Motion Studio' app. It will guide you through all the steps needed to create your animation, from taking the photos to adding sounds and watching it back.

Good luck, and please share your videos with us!