

READING CHALLENGE

The Robot Who Went to Mars

Meet Perseverance, the car-sized robot exploring the Red Planet right now

Level	A2 (Elementary)
Age Group	Teens (11-16)
Topic	True Stories
Duration	~15 minutes
Skill	Reading

Right now, at this very moment, a robot the size of a small car is driving across the red, dusty **surface** of Mars. Its name is Perseverance, and it is one of the most amazing machines humans have ever built. It has cameras for eyes, a drill for an arm, and a small **helicopter** friend that can fly. Perseverance is not controlled by a person sitting inside it. There is nobody on Mars. Instead, scientists on Earth send instructions to the robot using radio **signals**. The robot follows these instructions, takes photos, collects rocks, and sends information back to Earth. This is the story of how Perseverance got to Mars and what it is doing there.

Why Mars?

Mars is the fourth planet from the Sun. It is often called the "Red Planet" because its soil contains a lot of iron, which makes it look red. Mars is our closest neighbour in space that is similar to Earth. It has mountains, valleys, and even **ancient** river beds. Scientists have found strong evidence that Mars once had water on its surface — rivers, lakes, and maybe even an ocean. Where there was water, there might have been life. Not big aliens or monsters, but tiny living things called microbes. Finding out if life ever existed on Mars is one of the biggest questions in science. That is why NASA, the American space agency, sent Perseverance to Mars. Its main **mission** is to look for signs of ancient life.

The Journey to Mars

Perseverance was built at NASA's Jet Propulsion Laboratory in California. It took engineers about eight years to design and build the **rover**. The robot is about 3 metres long, 2.7 metres wide, and 2.2 metres tall. It weighs about 1,025 kilograms — that is heavier than a small car. On 30 July 2020, a powerful rocket called Atlas V lifted off from Cape Canaveral in Florida. It carried Perseverance inside a special capsule. The **launch** was perfect. The spacecraft then travelled through space for almost seven months, covering about 480 million kilometres. That is a very long journey. If you could drive a car at highway speed without stopping, it would take you more than 500 years to travel that far.

Seven Minutes of Terror

On 18 February 2021, Perseverance arrived at Mars. But landing was the most dangerous part. NASA engineers call the landing process "seven minutes of terror." Here is why: the spacecraft entered the Martian **atmosphere** at a speed of about 20,000 kilometres per hour. It had to slow down to zero in just seven minutes. First, the heat shield on the bottom of the capsule protected the rover from temperatures of over 1,300 degrees Celsius. Then, a huge **parachute** opened to slow the capsule down further. But Mars has a very thin atmosphere, so the parachute alone was not enough. In the final moments, a special platform with rockets called the "sky crane" lowered Perseverance gently to the ground on cables. It was like something from a science fiction film. The landing was **spectacular**. NASA had cameras everywhere, so for the first time in history, people on Earth could watch a real video of a rover landing on another planet.

Jezero Crater

Perseverance landed in a place called Jezero [crater](#). Scientists chose this spot very carefully. Jezero is a crater about 45 kilometres wide. About 3.5 billion years ago, it was a lake filled with water. A river flowed into the lake, creating a delta — a fan-shaped area where the river meets the lake. Deltas on Earth are very good places to find signs of life because tiny organisms get trapped in the mud and sand. Scientists believe the same thing might have happened on Mars. If there were ever tiny living things in the water of Jezero, their remains could still be in the rocks. That is what Perseverance is looking for.

What Perseverance Does Every Day

Perseverance has many science [instruments](#). It has 23 cameras that take very detailed photos. It has a special tool called SHERLOC that uses a laser to study rocks. It has another tool called PIXL that can tell what chemicals are inside a rock. The rover also has a drill. It can drill into rocks and collect small [samples](#) — little tubes filled with Martian rock and dust. These tubes are very important. Perseverance leaves them on the ground at certain spots. In the future, another mission will go to Mars, pick up these tubes, and bring them back to Earth. Scientists will then study the samples in their laboratories. This will be the first time we have ever brought rocks from Mars to Earth. Perseverance also collects weather [data](#). It measures temperature, wind speed, humidity, and dust in the air. A typical day on Mars is very cold — about minus 60 degrees Celsius. The rover works during the Martian day and sleeps at night to save energy. It gets its power from a nuclear battery, not from [solar](#) panels, so it can work even when the sky is dusty and dark.

Ingenuity: The Little Helicopter

Perseverance did not go to Mars alone. It carried a small helicopter called Ingenuity. Ingenuity weighs only 1.8 kilograms — about the same as a bag of sugar. Nobody was sure if a helicopter could fly on Mars. The atmosphere on Mars is very thin — about 100 times thinner than on Earth. Flying there is like flying at an altitude of 30,000 metres on Earth, which is higher than any helicopter has ever flown here. On 19 April 2021, Ingenuity made its first flight. It rose about 3 metres off the ground, hovered for about 30 seconds, and landed safely. It was the first powered flight on another planet. The NASA team was so happy they started clapping and cheering. Ingenuity was only supposed to fly five times as a test. But it worked so well that NASA kept using it. By early 2024, Ingenuity had completed 72 flights. It helped Perseverance by flying ahead and taking aerial photos to find the best driving routes. Sadly, in January 2024, one of its rotor blades was damaged during landing, and the helicopter could no longer fly. But its mission was a huge success.

Talking to Earth

One of the biggest challenges of working on Mars is communication. Mars is very far from Earth. Depending on where the two planets are in their orbits, the distance can be between 55 million and 400 million kilometres. Because of this distance, a radio signal takes between 3 and 22 minutes to travel from Mars to Earth. This means that when Perseverance sends a photo, scientists on Earth do not see it for several minutes. And when scientists send a command to the rover, the rover does not receive it for several minutes either. You cannot control the rover like a remote-controlled car. Instead, scientists plan each day in advance.

They send a list of instructions to Perseverance in the morning, and the rover follows them during the day. If something unexpected happens — like a big rock in the way — the rover has to make its own decisions. It has special software that helps it avoid obstacles and choose safe paths.

What Comes Next

Perseverance is still working on Mars today. It has already travelled several kilometres across Jezero Crater and collected dozens of rock samples. Scientists are very excited about some of the rocks it has found. Some show signs that water was present for a very long time, which is good news for the search for ancient life. NASA and the European Space Agency are planning a future mission called Mars Sample Return. This mission will send another spacecraft to Mars to pick up the sample tubes that Perseverance has left on the ground and bring them back to Earth. It will be one of the most complicated space missions ever attempted. Looking even further into the future, NASA wants to send humans to Mars. The first astronauts could arrive in the 2030s or 2040s. Perseverance is helping to prepare for this. One of its instruments, called MOXIE, has successfully made oxygen from the carbon dioxide in the Martian atmosphere. If we can make oxygen on Mars, future astronauts will be able to breathe and make rocket fuel there. The little robot driving across the red dust of Mars is not just doing science — it is preparing the way for us.

Vocabulary

Term	Definition
rover	a vehicle designed to move across the surface of a planet
launch	to send a spacecraft into space
surface	the top or outside part of something, like the ground of a planet
sample	a small amount of something taken to study or test
mission	an important job or task, especially one involving travel
signal	a message sent using radio waves, light, or electricity
atmosphere	the layer of gases around a planet
crater	a large hole in the ground made by something hitting it, like a meteor
parachute	a large piece of cloth that opens in the air to slow something down
ancient	very, very old; from thousands or millions of years ago
solar	related to the sun or using energy from the sun
instrument	a tool or device used to do a specific job, especially in science
spectacular	very impressive and exciting to look at
helicopter	a flying machine with spinning blades on top
data	facts, numbers, or information collected for study

Comprehension Quiz

1. When did the Perseverance rover land on Mars?

- A) July 2020
- B) February 2021
- C) January 2022
- D) March 2019

2. What is the name of the small helicopter that flew on Mars?

- A) Eagle
- B) Falcon
- C) Ingenuity
- D) Discovery

3. Why did NASA choose Jezero Crater for the landing?

- A) It is the highest point on Mars
- B) It is the warmest place on Mars
- C) Scientists believe it was once a lake with water
- D) It is the closest place to Earth

4. How long does it take for a signal to travel from Mars to Earth?

- A) About 30 seconds
- B) About 3 to 22 minutes
- C) About 2 hours
- D) About 1 day

5. What is one of Perseverance's most important jobs on Mars?

- A) Building a house for astronauts
- B) Collecting rock and soil samples
- C) Planting trees
- D) Taking photos of Earth

Answer Key

#	Answer	Question
1	B	When did the Perseverance rover land on Mars?
2	C	What is the name of the small helicopter that flew on Mars?
3	C	Why did NASA choose Jezero Crater for the landing?
4	B	How long does it take for a signal to travel from Mars to Earth?
5	B	What is one of Perseverance's most important jobs on Mars?