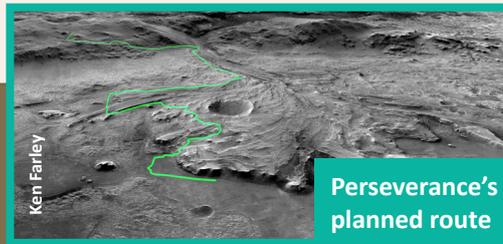


SCIENCE NEWS

# ROVER LANDS ON MARS



Perseverance's planned route



NASA/JPL-Caltech

NASA's Perseverance rover is exploring Mars after successfully landing last week.

The US space agency's latest Red Planet robot is the most advanced yet, and it's on a mission to find signs of ancient life and collect samples of rock for future return to Earth.

NASA hopes this mission will provide lots of valuable data for a first trip by astronauts to Mars.

There were happy scenes at mission control in Los Angeles, USA, as the rover successfully touched down inside a huge crater last Thursday. It left Earth on 30 July 2020 and had been travelling

through space for nearly seven months. The 1,025-kilogram robot covered some 472 million kilometres before it entered the Martian atmosphere at 19,000km/h (12,000mph). Its descent to the Red Planet was entirely self-guided, which means that the team at mission control could only watch and hope it all went well. After entering the atmosphere, Perseverance cut itself loose from its parachute and used rocket thrusters on a 'sky crane' to slow down.

After the "seven minutes of terror" as it landed, Perseverance flight controller Swati Mohan announced: "Touchdown confirmed! Perseverance safely on the surface of Mars, ready to begin seeking signs of past life." NASA scientists, all wearing masks due to the pandemic, erupted with cheers and applause. A few minutes later, the first images taken by Perseverance arrived on Earth.

The Perseverance rover is designed to help us better understand the geology of Mars and find signs of ancient life. The mission will collect and store a set of rock and soil samples that will hopefully be returned to Earth in the future. Perseverance will also test new technology that could be used for future robotic and human missions to Mars.



Mission control



Perseverance's first image of Mars, which was posted on Twitter

Advertisement feature



**ASTRO PI**  
MISSION ZERO

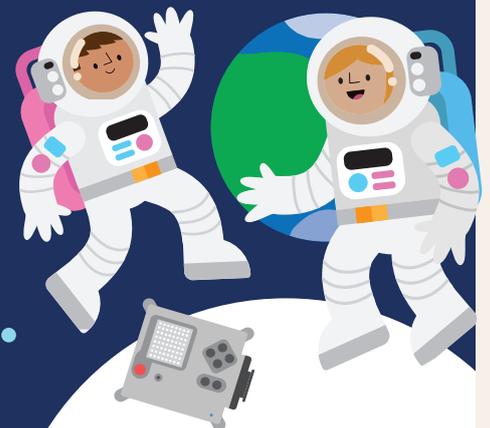
## SEND A MESSAGE TO ASTRONAUTS IN SPACE

THE European Space Agency (ESA) and the Raspberry Pi Foundation are offering you the chance to take part in Astro Pi – Mission Zero!

Astro Pi – Mission Zero gives YOU the chance to write a simple computer program and send a message to the astronauts on board the International Space Station (ISS)!

Taking part is free and easy, and you don't need any coding experience. Just ask a parent or teacher to register at [astro-pi.org/mission-zero](http://astro-pi.org/mission-zero)!

ALL ENTRIES MUST BE SUBMITTED BY 19 MARCH!



“ You are promoted to real ISS scientists. Congratulations! ”

– Thomas Pesquet, ESA astronaut



Thomas points to Astro Pi computers on board the ISS

Head to [astro-pi.org/mission-zero](http://astro-pi.org/mission-zero) to start your mission!



**GLOSSARY**

**sky crane** — A hovering, rocket-powered spacecraft responsible for lowering the rover to the surface of Mars in the final stage of its descent

**“seven minutes of terror”** — NASA can’t

communicate with the spacecraft in real-time from Earth and this is how the agency refers to the seven-minute delay

**geology** — The study of the solid features of any terrestrial planet or satellite

**advertisement feature** — An article created by external companies/brands

who have paid to have it published in *First News*. They must be clearly labelled so the reader knows this is not editorial content.

**the Raspberry Pi Foundation** — A UK-based charity that works to put the power of computing into the hands of people all over the world. The Raspberry Pi is a low cost, credit-card sized computer that can be plugged into a standard monitor and keyboard. It can be used to enable people to explore computing and learn to program



**Questions on: Science news: ‘Rover lands on Mars’ and Advertisement feature: ‘Send a message to astronauts in space’**

**Questions on: ‘Rover lands on Mars’**

**Part A: Find and explain the facts**

**A1.** Answer the following quick-fire questions.

What is the US space agency’s latest Red Planet robot called?	
What is the “Red Planet” a nickname for?	
What is the robot’s mission?	
How does NASA hope to use the information collected by the rover?	
Where is mission control?	

**A2.** Complete the sentences by filling each gap with the correct number.

The rover left Earth on \_\_\_\_\_ July 2020 and had been travelling through space for nearly \_\_\_\_\_ months.

The \_\_\_\_\_-kilogram robot covered some \_\_\_\_\_ million kilometres before it entered the Martian atmosphere at \_\_\_\_\_ km/h (\_\_\_\_\_ mph).

**Part B: Deduce and infer information**

**B1.** Why is it significant that the robot’s descent to Mars was completely self-guided?

**B2.** Why do you think that the “seven minutes of terror” are referred to as such by NASA?

**B3.** Why do you think that there is mention of the fact that the scientists at mission control were wearing masks due to the pandemic?

**Part C: Analyse the writing and presentation**

**C1.** Look at the Twitter post from NASA’s Perseverance Mars Rover account. Comment on the use of the first-person perspective.

**Part D: Writing task**

Imagine that you are part of the team behind the Perseverance Twitter account. Write a tweet describing the Mars terrain that has been picked up on Perseverance’s cameras. Make sure that you use the first-person narrative voice. (Max 280 characters)

**Questions on: ‘Send a message to astronauts in space’**

**Part A: Find and explain the facts**

**A1.** What is Astro Pi – Mission Zero?

**A2.** How do you take part in Astro Pi – Mission Zero?

**A3.** Who is Thomas Pesquet?

**Part B: Deduce and infer information**

**B1.** Why do you think that the European Space Agency and the Raspberry Pi Foundation were willing to pay to have their feature included in *First News*?

**B2.** What do you think that the *First News* team have to consider when choosing what to include as an advertisement feature and what makes this advertisement feature an appropriate choice?

**Part C: Analyse the writing and presentation**

**C1.** The following persuasive techniques are used in the feature. Comment on the effect of their use.

The use of direct address “YOU”.	
The use of exclamatory sentences.	
The use of an expert (Thomas Pesquet).	
The use of colour.	

**GLOSSARY**

**sky crane** — A hovering, rocket-powered spacecraft responsible for lowering the rover to the surface of Mars in the final stage of its descent

**“seven minutes of terror”** — NASA can’t communicate with the spacecraft in real-time from Earth and this is how the agency refers to the seven-minute delay

**geology** — The study of the solid features of any terrestrial planet or satellite

**advertisement feature** — An article created by external companies/brands

who have paid to have it published in *First News*. They must be clearly labelled so the reader knows this is not editorial content.

**the Raspberry Pi Foundation** — A UK-based charity that works to put the power of computing into the hands of people all over the world. The Raspberry Pi is a low cost, credit-card sized computer that can be plugged into a standard monitor and keyboard. It can be used to enable people to explore computing and learn to program



**Questions on: Science news: ‘Rover lands on Mars’ and Advertisement feature: ‘Send a message to astronauts in space’**

**Questions on: ‘Rover lands on Mars’**

**Part A: Find and explain the facts**

**A1.** Answer the following quick-fire questions.

<b>What is the US space agency’s latest Red Planet robot called?</b>	..... .....
<b>What is the “Red Planet” a nickname for?</b>	..... .....
<b>What is the robot’s mission?</b>	..... .....
<b>How does NASA hope to use the information collected by the rover?</b>	..... .....
<b>Where is mission control?</b>	..... .....

**A2.** Complete the sentences by filling each gap with the correct number.

The rover left Earth on \_\_\_\_\_ July 2020 and had been travelling through space for nearly \_\_\_\_\_ months.

The \_\_\_\_\_-kilogram robot covered some \_\_\_\_\_ million kilometres before it entered the Martian atmosphere at \_\_\_\_\_ km/h (\_\_\_\_\_ mph).

**Part B: Deduce and infer information**

**B1.** Why is it significant that the robot’s descent to Mars was completely self-guided?

.....

.....

.....

.....

.....

.....

.....





**B2.** What do you think that the *First News* team have to consider when choosing what to include as an advertisement feature and what makes this advertisement feature an appropriate choice?

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

**Part C: Analyse the writing and presentation**

**C1.** The following persuasive techniques are used in the feature. Comment on the effect of their use.

<p><b>The use of direct address “YOU”.</b></p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
<p><b>The use of exclamatory sentences.</b></p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
<p><b>The use of an expert (Thomas Pesquet).</b></p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
<p><b>The use of colour.</b></p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>

## Teacher Answers

**AIM OF THE NEWS COMPREHENSIONS:** News reports are unique non-fiction texts. Being real, they naturally engage students, and with the range of topics that are covered, help to develop pupils' knowledge and understanding of the wider world outside the classroom. The reports are ideal for short, focused comprehension or discussion activities. Along with the opportunity to find fascinating facts and appreciate the opinions of those involved, there is plenty to be inferred and deduced to understand in more depth what is being reported. Like authors, journalists play with language, so news 'stories' are rich nuggets of text to investigate and provide the opportunity for literacy programmes.

**TEACHER ANSWER GUIDE:** The teacher answers are intended to provide a guide to the reading skill each question is practising. Suggestions are given for a starting point for responses that students would be expected to give at the start of KS3. Further suggestions then give fuller, more developed responses that students will work towards by the end of KS3, in preparation for the non-fiction elements of GCSE English language.

### 'Rover lands on Mars'

#### Part A

**A1. Answer the following quick-fire questions.**

READING SKILL — Find and explain information

*Possible answer*

*Starting point – some information correctly identified*

*Developed response – information correctly identified and clearly explained*

What is the US space agency's latest Red Planet robot called?	<ul style="list-style-type: none"> <li>Perseverance</li> </ul>
What is the "Red Planet" a nickname for?	<ul style="list-style-type: none"> <li>Mars</li> </ul>
What is the robot's mission?	<ul style="list-style-type: none"> <li>To find signs of ancient life and collect samples of rock for future return to Earth.</li> </ul>
How does NASA hope to use the information collected by the rover?	<ul style="list-style-type: none"> <li>NASA hopes the rover will provide lots of valuable data for a first trip by astronauts to Mars. It is also hoped that Perseverance will test new technology that could be used for future robotic and human missions to Mars.</li> </ul>
Where is mission control?	<ul style="list-style-type: none"> <li>Los Angeles, USA</li> </ul>

**A2. Complete the sentences by filling each gap with the correct number.**

READING SKILL — Find and explain information

*Possible answer*

*Expected response*

- The rover left Earth on **30** July 2020 and had been travelling through space for nearly seven months. The **1,025**-kilogram robot covered some **472** million kilometres before it entered the Martian atmosphere at **19,000**km/h (**12,000**mph).

#### Part B

**B1. Why is it significant that the robot's descent to Mars was completely self-guided?**

READING SKILL — Infer information and justify with evidence from the text

*Possible answer*

*Starting point*

- It is significant that the robot's descent to Mars was completely self-guided because the scientists at mission control had no power over what happened at that point. They couldn't intervene if anything started going wrong.

*Development*

- The team could only "watch and hope it all went well." Therefore, the scientists just had to rely on the accuracy of the calculations and engineering work that they did before the rover left Earth.

**B2. Why do you think that the “seven minutes of terror” are referred to as such by NASA?**

READING SKILL — Infer information and justify with evidence from the text

**Possible answer****Starting point**

- This phrase describes the anxiety felt by the scientists during the seven minutes when those at mission control cannot communicate with the rover in real-time because Mars is too far away from Earth.

**Development**

- By the time that the spacecraft engineers back on Earth learn what has happened, the rover will either have been destroyed or have landed safely seven minutes ago. This is a terrifying period for the scientists because so much time and money has been invested in the project and they just have to wait to find out whether the mission has been successful and all their hard work has been worthwhile.

**B3. Why do you think that there is mention of the fact that the scientists at mission control were wearing masks due to the pandemic?**

READING SKILL — Infer information and justify with evidence from the text

**Possible answer****Starting point**

- There is mention of the fact that the scientists were wearing masks due to the pandemic because the team were together at mission control and are all pictured celebrating. Therefore, it was important to highlight that despite the focus on the mission, they were still taking precautions to stop the spread of coronavirus.

**Development**

- It would set a bad example if an important agency like NASA did not have a COVID-secure workplace.

**Part C****C1. Look at the Twitter post from NASA’s Perseverance Mars Rover account. Comment on the use of the first-person perspective.**

READING SKILL — Explain methods used by the writer with appropriate use of terminology

**Possible answer****Starting point**

- The use of the first-person perspective creates a persona for Perseverance and makes the story of the rover come alive for people who may not ordinarily be interested in space science.

**Development**

- By imbuing Perseverance with a personality, the team behind the Twitter account highlight how different and ambitious this project is. It makes the information about the mission really accessible and helps members of the public to connect with it.

**Part D – Writing task**

Imagine that you are part of the team behind the Perseverance Twitter account. Write a tweet describing the Mars terrain that has been picked up on Perseverance’s cameras. Make sure that you use the first-person narrative voice.

(Max 280 characters)

READING SKILL — Develop personal ideas from reading news stories

**Possible answer**

- Wow! This planet is amazing. The ground is rocky and uneven, but there is a fine red dust on everything that is strangely beautiful. Stretching far away in front of me there is a vast expanse pitted with craters and dry lake beds. I feel honoured to be investigating this alien world.

---

**‘Send a message to astronauts in space’****Part A****A1. What is Astro Pi – Mission Zero?**

READING SKILL — Find and explain information

**Possible answer****Expected response**

- Astro Pi-Mission Zero is an initiative through which young people can write a simple computer program and send a message to the astronauts on board the International Space Station.

**A2. How do you take part in Astro Pi – Mission Zero?**

READING SKILL — Find and explain information

**Possible answer****Starting point**

- You need to ask a parent or teacher to register at [astro-pi.org/mission-zero](https://astro-pi.org/mission-zero). All entries must be submitted by 19 March.

**Development**

- Taking part is free and easy, and you don’t need any coding experience.

**A3. Who is Thomas Pesquet?**

READING SKILL — Find and explain information

**Possible answer**

**Starting point**

- Thomas Pesquet is an ESA astronaut.

**Development**

- He is pictured on the ISS and quoted in the advertisement.

**Part B**

**B1. Why do you think that the European Space Agency and the Raspberry Pi Foundation were willing to pay to have their feature included in First News?**

READING SKILL — Infer information based on own knowledge

**Possible answer**

**Starting point**

- The European Space Agency and the Raspberry Pi Foundation were willing to pay to advertise in *First News* because it gives them access to their target audience.

**Development**

- *First News* readers tend to be young people between the ages of 7 and 14. Astro Pi – Mission Zero is open to children under 14 so by advertising in *First News* the organisations behind the challenge can be sure that the information will be getting to people of the right age.
- Furthermore, *First News* often covers space science stories and makes reference to the ISS. Therefore, it seems likely that *First News* readers will be interested in Astro Pi – Mission Zero and will want to get involved.

**B2. What do you think that the First News team have to consider when choosing what to include as an advertisement feature and what makes this advertisement feature an appropriate choice?**

READING SKILL — Infer information based on own knowledge

**Possible answer**

**Starting point**

- As a responsible publication, *First News* needs to ensure that all advertisements are appropriate for their readers and cover topics likely to interest and be of benefit to them. For example, it would not be fitting for junk food adverts to be featured because of the link between junk food and childhood obesity.

**Development**

- However, the advertisement for Astro Pi – Mission Zero is an appropriate choice because the challenge is educational. It involves readers in writing a computer program and communicating with the ISS. Thus, readers would be developing important life skills if they entered the challenge.

**Part C**

The following persuasive techniques are used in the feature. Comment on the effect of their use.

READING SKILL — Explain methods used by the writer with appropriate use of terminology

**Possible answer**

**Starting point**

<p>The use of direct address “YOU”.</p>	<ul style="list-style-type: none"> <li>• This makes the reader feel as if they are being targeted specifically and given this chance to enter. The effect is heightened by the use of capital letters.</li> </ul>
<p>The use of exclamatory sentences.</p>	<ul style="list-style-type: none"> <li>• Exclamation marks are used at the end of every sentence in the main text for this advertisement. This makes the challenge seem exciting and like an unbelievable opportunity.</li> </ul>
<p>The use of an expert (Thomas Pesquet).</p>	<ul style="list-style-type: none"> <li>• Pesquet is an ESA astronaut and he is pictured pointing to Astro Pi computers on board the ISS. This shows that the challenge is genuine. He is also quoted as saying: “You are promoted to real ISS scientists. Congratulations!” This is a bit like celebrity endorsement as it shows that Pesquet believes the task is worth doing.</li> </ul>
<p>The use of colour.</p>	<ul style="list-style-type: none"> <li>• A range of bright, bold colours are used throughout the advertisement to catch the eye and give the impression of fun. Furthermore, key information such as the date by which you must enter and where you go to enter, are picked out in bright yellow so that it is highlighted.</li> </ul>