

TASK 4: Guided reading – Perseverance Mars Landing		
<u>L/O: retrieve and record information; understand how language, structure and presentation contribute to meaning.</u>	What I think	What my teacher thinks
<i>I can remember to:</i>		
Read the text.	☐	☐
Read the question and be clear about what to do.	☐	☐
Write in full sentences, that refer to the question.	☐	☐
Punctuate my sentences correctly.	☐	☐

Re-read the text, and look out for how the story is written for an audience.

- Does the story assume that the reader already knows something about the subject?
e.g. the very first word of the story is 'Nasa' – no explanation is given for what this means. In the same sentence, the word 'lander' is used – again, no explanation is given.

Find and list other words from the text that might need an explanation. Add an explanation if you are able to. Do it like this;

Nasa; (or NASA) acronym, National Aeronautics and Space Administration. NASA is a U.S. government agency that is responsible for science and technology related to air and space.

lander; noun...

MARS LANDING: NASA PERSEVERANCE ROVER SUCCESSFULLY DROPS ONTO RED PLANET TO SEARCH FOR ALIEN LIFE

Andrew Griffin

Nasa has successfully landed its latest lander on Mars.

Yesterday evening (GMT), the Perseverance robot successfully made its way to the surface after withstanding “seven minutes of terror” to drop down through the perilous Martian atmosphere.

The rover will now begin its work examining the red planet’s surface to find whether there is evidence of past alien life. It will also launch the first ever controlled flight on another planet – in the form of a helicopter – as well as exploring the ways that humans might be able to survive on Mars.

Mission controllers at Nasa’s Jet Propulsion Laboratory in California watched on an 11-minute delay as the vehicle guided itself down to the ground. Radio signals eventually confirmed the rover had survived being dropped into Jezero Crater, the site of a former lake that was selected because it could once have been home to life.

The arrival brought the end of a journey that saw Perseverance fly through space for almost seven



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months and almost 300 million miles. Its final “seven minutes of terror”, as it made its way through the entry, descent and landing part of the mission, marked the most perilous part of the journey.

But it also began a process that will see the rover explore the surface, examining the soil and rocks as well as storing them away with the intention they will one day be collected and brought back to Earth.

“It really is the beginning of a new era,” Nasa’s associate administrator for science, Thomas Zurbuchen, said earlier in the day during Nasa’s webcast of the event.

Perseverance is one of three spacecraft to arrive at the planet this month, following those from the Chinese and United Arab Emirates space agencies. All took advantage of the helpful alignment of Earth and Mars, that happens every two years and two months.

The landing represented the riskiest part of a two-year, \$2.7bn endeavour whose primary aim is to search for possible fossilized signs of microbes that may have flourished on Mars some 3 billion years ago, when the fourth planet from the sun was warmer, wetter and potentially hospitable to life.

Scientists hope to find biosignatures embedded in samples of ancient sediments that Perseverance is designed to extract from Martian rock for future analysis back on Earth – the first such specimens ever collected by humankind from another planet.

Two subsequent Mars missions are planned to retrieve the samples and return them to Nasa in the next decade.

Thursday's landing came as a triumph for a pandemic-weary United States in the grips of economic dislocation caused by the Covid-19 public health crisis.

Nasa scientists have described Perseverance as the most ambitious of nearly 20 US missions to Mars dating back to the Mariner spacecraft's 1965 fly-by.

Larger and packed with more instruments than the four Mars rovers preceding it, Perseverance is set to build on previous findings that liquid water once flowed on the Martian surface and that carbon and other minerals altered by water and considered precursors to the evolution of life were present.

Perseverance's payload also includes demonstration projects that could help pave the way for eventual human exploration of Mars, including a device to convert the carbon dioxide in the Martian atmosphere into pure oxygen.

The box-shaped tool, the first built to extract a natural resource of direct use to humans from an extraterrestrial environment, could prove invaluable for future human life support on Mars

and for producing rocket propellant to fly astronauts home.

Another experimental prototype carried by Perseverance is a miniature helicopter designed to test the first powered, controlled flight of an aircraft on another planet. If successful, the 4-pound (1.8-kg) helicopter could lead to low-altitude aerial surveillance of distant worlds, officials said.

The daredevil nature of the rover's descent to the Martian surface, at a site that Nasa described as both tantalizing to scientists and especially hazardous for landing, was a momentous achievement in itself.

The multi-stage spacecraft carrying the rover soared into the top of Martian atmosphere at nearly 16 times the speed of sound on Earth, angled to produce aerodynamic lift while jet thrusters adjusted its trajectory.

A jarring, supersonic parachute inflation further slowed the descent, giving way to deployment of a rocket-powered "sky crane" vehicle that flew to a safe landing spot, lowered the rover on tethers, then flew off to crash a safe distance away.

Perseverance's immediate predecessor, the rover Curiosity, landed in 2012 and remains in operation, as does the stationary lander InSight, which arrived in 2018 to study the deep interior of Mars.

Last week, separate probes launched by the United Arab Emirates and China reached Martian orbit. Nasa has three Mars satellites still in orbit, along with two from the European Space Agency.