



Struggles of NASA's Mars Rovers: Battling Challenges on Red Planet

Description

NASA's Perseverance and Curiosity rovers have been traversing Mars for years, exploring distinct regions of the Red Planet hundreds of miles apart. In recent months, however, both robots have encountered challenges in fulfilling crucial aspects of their missions.

Perseverance, embarking on its fifth scientific endeavor, faces difficulty reaching the rim of an ancient crater on Mars, taking significantly longer than expected to navigate the Martian terrain. Meanwhile, Curiosity has had its own obstacles, having to abandon investigating a dried-up channel after its wheels became stuck on a rock.

For nearly three months, Perseverance has been ascending the rim of Jezero Crater to investigate the potential existence of past life on Mars. The rover is grappling with the toughest terrain it has encountered, hindering progress beyond the mission team's projections.

Undertaking its fifth scientific campaign since its arrival on Mars four years ago, Perseverance faces the immense challenge of exploring Jezero Crater's western rim, which displays evidence of ancient hydrothermal activity. The rover must conquer slopes as steep as 23 degrees and ascend approximately 1,000 feet to reach the crater rim, formerly a vast lake billions of years ago. However, the journey has proven arduous.

Struggling with slippery and loosely packed terrain comprising dusty sand and a fragile crust, Perseverance's progress has been significantly impeded. The rover has covered only half the typical distance it would on a standard drive, encountering setbacks in its ascent.

Concurrently, NASA's Curiosity rover, preceding Perseverance, found itself navigating challenging Martian terrain as well. Hindered by suspension limits, Curiosity halted its journey prematurely, with one wheel stuck in a trough and another perched on a rock.

These setbacks underscore the formidable nature of Mars' terrain and the trials faced by the rovers in fulfilling their scientific objectives.

Vocabulary List:

1. **Traversing** /trə'vɜ:rsɪŋ/ (verb): To travel through or across.
2. **Obstacles** /'ɒbstəklz/ (noun): Things that block one's way or prevent progress.
3. **Terrain** /tə'reɪn/ (noun): A stretch of land especially with regard to its physical features.
4. **Challenges** /'tʃælɪndʒɪz/ (noun): Difficult tasks or situations that require effort to overcome.
5. **Impeding** /ɪm'pi:dɪŋ/ (verb): To delay or prevent someone or something by obstruction.



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6. **Investigate** /ɪn'vestɪgeɪt/ (verb): To carry out a systematic or formal inquiry to discover and examine the facts of an issue.

Comprehension Questions

Multiple Choice

1. How many rovers have been mentioned in the text exploring Mars?
Option: One
Option: Two
Option: Three
Option: Four
2. What is the main challenge facing Perseverance according to the text?
Option: Crossing a river
Option: Navigating steep slopes
Option: Avoiding dust storms
Option: Communicating with Earth
3. What type of terrain is described as impeding Perseverance's progress?
Option: Rocky mountains
Option: Slippery sand and fragile crust
Option: Lush forests
Option: Frozen tundra
4. Why did Curiosity have to abandon investigating a dried-up channel?
Option: Loss of power
Option: Navigation error
Option: Wheels stuck on a rock
Option: Technical malfunction
5. What is the objective of Perseverance's mission on Mars?
Option: Find water sources
Option: Explore underground caves
Option: Investigate potential past life
Option: Study Martian weather patterns



6. What is one of the challenges faced by Curiosity mentioned in the text?

Option: Communication failure

Option: Sandstorms

Option: Stuck wheels

Option: Running out of fuel

True-False

7. Perseverance and Curiosity rovers are facing challenges on Mars.

8. Perseverance has already successfully investigated past life on Mars.

9. Curiosity is the newest rover on Mars.

10. Curiosity is exploring the eastern rim of Jezero Crater.

11. The terrain on Mars is described as easy to navigate in the text.

12. Curiosity had to abandon its mission due to a technical malfunction.

Gap-Fill

14. Perseverance must conquer slopes as steep as _____ degrees.

15. Curiosity had one wheel _____ in a trough and another perched on a rock.

16. Perseverance has been exploring Jezero Crater's western rim, which shows evidence of ancient _____ activity.

17. Curiosity halted its journey prematurely due to suspension _____.

18. The setbacks faced by the rovers highlight the _____ nature of Mars' terrain.

Answer

Multiple Choice: 1. Two 2. Navigating steep slopes 3. Slippery sand and fragile crust 4. Wheels stuck on a rock 5. Investigate potential past life 6. Stuck wheels

True-False: 7. True 8. False 9. False 10. False 11. False 12. False

Gap-Fill: 14. 23



15. stuck 16. hydrothermal 17. limits 18. formidable

Answer

CATEGORY

1. Sci/Tech - LEVEL6

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