

Mars and Earth - Compare and Contrast

NASA is preparing to send humans to Mars by the 2030s. The goal is to have humans stay on the planet for months. To survive the trip to Mars, scientists and engineers must make the trip relatively fast. A one-way trip to Mars would take about 8 months. Artemis I is the first in a series of missions that will help enable human exploration to the Moon and Mars. NASA is preparing to send astronauts into deep space with enough supplies and equipment for months for a 'there and back' journey.

In this essay, students will compare and contrast Earth and Mars resources, while detailing how scientists and engineers are preparing innovations to help humans survive the hostile conditions of the Red Planet.

Learning Target: Students will write a five-paragraph essay comparing and contrasting Earth and Martian Resources.

Essay Instructions

1. Brainstorm topic with a Venn Diagram
2. Explore Similarities and Differences
3. Hone Your Argument List
4. Gather Supporting Evidence
5. Write an Outline
 - a. Introduction
 - b. Thesis Statement
 - c. Body
 - d. Conclusion
6. Write Your Essay
7. Peer Review
8. Revisions
9. Cite your resources using [MLA9](#), such as:

Weir, Andy. *Martian: Classroom Edition*. Broadway Books, 2016.

Surviving on Mars

- Energy/Fuel/Heat
- Water
- Growing Food
- Harmful Radiation
- Friendships
- Other Challenges?

Research Points

1. Geological features
 - a. Gravity
 - b. Soils
 - c. Features
2. Meteorological
 - a. Day length
 - b. Seasons
 - c. Climate
 - d. Temperatures
 - e. Moisture
 - f. Air composition
3. Solar System
 - a. Solar irradiance
 - b. Harmful radiation

Resources

- http://www-k12.atmos.washington.edu/k12/resources/mars_data-information/mars_overview.html
- <http://tomatosphere.letstalkscience.ca/Resources/library/ArticleId/4664/earth-vs-mars.aspx>
- <http://www.nasa.gov/feature/goddard/the-fact-and-fiction-of-martian-dust-storms>
- <https://solarsystem.nasa.gov/planets/mars/overview/>

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- <https://www.acs.org/content/acs/en/education/resources/highschool/chemmatters/past-issues/2016-2017/april-2017/surviving-on-mars.html>