

Lesson Plan

Parallel Exploration

Book: *Colonizing Mars*

Series: Science for the Future

Level: Voyager

Objective

To help students practice writing an opinion essay in which they support a claim with relevant details and reasoning.

Supplies

- *Colonizing Mars* book
- “Can We Colonize Mars?” article on the PBS website:
<https://www.pbs.org/wgbh/nova/article/want-to-live-in-a-treehouse-on-mars/>
- A computer with internet access for each student

Before the Activity

Have students read the *Colonizing Mars* book.

Activity

First, read the “Can We Colonize Mars?” article as a class. In this article, Penn State professor Jim Pawelczyk, who is a former astronaut, compares scientists’ dreams to start a colony on another planet to earlier exploration efforts on Earth. Use the following prompts to discuss this idea as a class:

- According to the article, what challenges would colonists face on Mars? (Answers: radiation, extreme temperatures, the need for energy, the need to bring massive amounts of supplies per person, etc.)
- What two groups or places does the article make comparisons to? (Answers: to early settlers who traveled to North American colonies such as Jamestown and to explorers in the late 1800s who studied and set up bases in Antarctica)
- In what ways would the experiences of colonists on Mars likely be similar to the experiences of colonists in Jamestown? (Answers: Both groups made long and dangerous journeys; both groups knew they’d likely never return home; both groups had to bring supplies with them, etc.)
- In what ways would a Mars colony likely be different? (Answer: Virginia was not as different from the colonists’ homes as Mars would be.)

- In what ways would the experiences of colonists on Mars likely be similar to the experiences of explorers in Antarctica? (Answers: Both groups would start small outposts in a harsh environment; both groups would face extreme temperatures; both groups would conduct research, etc.)
- In what ways would a Mars colony likely be different? (Answer: People never tried to create a permanent colony in Antarctica.)

Based on the above discussion, ask readers to write a one-page essay in response to the following prompt:

- In the article, Pawelczyk draws parallels between colonizing Mars and previous attempts at exploration on Earth. Do you think this comparison is accurate? Why or why not?

Students should begin the essay by stating their position. They should follow this statement with three body paragraphs. Each body paragraph should begin with a topic sentence that supports the essay's position. The rest of the paragraph should include evidence and reasoning to support that topic statement. Students can use information from the online article, the book, or their own experience. The essay should end with a concluding paragraph that restates the essay's main points and ties its ideas together.

Evaluation

Collect all the essays, and give each student up to 25 points:

- 5 points for beginning with a statement of the essay's position
- 5 points for supporting that statement with evidence and reasoning
- 5 points for ending with a conclusion that sums up the essay's position
- 5 points for organizing information in a way that is clear and easy to follow
- 5 points for using correct spelling and grammar

Standards

This lesson may be used to address the Common Core State Standards' writing standards, grade 7 (W 7.1).