

# Anticipation Guide

Name: \_\_\_\_\_

**Directions:** *Before reading the article*, in the first column, write “A” or “D,” indicating your agreement or disagreement with each statement. As you read, compare your opinions with information from the article. In the space under each statement, cite information from the article that supports or refutes your original ideas.

Me	Text	Statement
		1. Titan is a moon of Jupiter.
		2. Titan is the only moon in our solar system with an atmosphere and clouds.
		3. Methane is a greenhouse gas.
		4. Scientists study organic molecules on Titan to learn more about the earliest forms of life.
		5. Titan is much warmer than Earth.
		6. Travel to Mars would take about five years.
		7. Mars' atmosphere is mostly carbon dioxide.
		8. Iron gives Mars its red color.
		9. Researchers have successfully grown simple crops in simulated Martian soil.
		10. In the past 20 years, scientists have found hundreds of planets in the universe.

## Graphic Organizer

Name: \_\_\_\_\_

**Directions:** As you read, complete the graphic organizer below to compare Mars and Titan.

	Mars	Titan
Atmospheric components & conditions		
Atmospheric pressure		
Water and its form		
Temperature		
Possibilities for generating energy		
Time required to get there		
Technology needed to sustain human life		

**Summary:** On the back of this paper, write a short email to a friend explaining whether you would like to go to Mars or Titan, providing reasons supported by information in the article.

## Student Reading Comprehension Questions

Name: \_\_\_\_\_

**Directions:** Use the article to answer the questions below.

1. Why are scientists studying Mars, Titan, and other celestial bodies?
2. List five conditions, similar to those of Earth, that scientists seek when searching for habitable locations across the universe.
3. (a) What condition on Titan makes it similar to Earth, and (b) how do Titan's clouds, rain, and lakes differ from those on Earth?
4. Give two examples of methane's important role in maintaining atmospheric conditions on Titan.
5. Why is the formation of complex organic molecules in Titan's atmosphere important to possible life on this moon?
6. Give two reasons why Titan is unsuitable for terrestrial life.

## Student Reading Comprehension Questions, cont.

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7. (a) According to scientists, what is a possible source of energy available for native life on Titan, and (b) how much energy is produced by the chemical reaction shown in the article?
8. Give two ways that spectrometers on spacecraft can identify individual atoms and molecules in space.
9. What is the connection between iron and microorganisms on Mars?
10. List three reasons why living on Mars is not ideal for humans.
11. How can Titan, Earth, and Mars be considered a movie trilogy?

### **Critical-Thinking Question**

***Write your answer on another piece of paper, if needed.***

1. Elon Musk, of SpaceX, has vowed to send a colony of people to reside on Mars within the next 50 years. Given the information in this article, (a) how will people prepare for their journey, and (b) what materials will they need for sustained life on Mars?