

Table of Contents

Introduction	4
Teaching Nonfiction Comprehension Skills	9
Teaching Vocabulary	14
Correlation to Standards	17
Lessons	18
Earth Day Heroes.....	18
Population Boom!.....	22
It's Asthma Season	26
Up in Smoke	30
Attack of the Locusts	34
Bigfoot? Big Hoax!.....	38
Best Friends Forever	42
A Tremendous Trade.....	46
Eight Is Enough.....	50
Too Young to Work.....	54
Green Machine	58
Feeling the Heat	62
Players with Pride	66
Amazing Mars.....	70
A New Way Forward.....	74
Reading, Writing, Rock Climbing.....	78
Pressure at the Pump	82
Heart and Soles	86
The Loss of Shuttle <i>Columbia</i>	90
The Lego® Life.....	94
Here Comes China	98
Witness to History.....	102
Appendices.....	106
Appendix A: References Cited	106
Appendix B: Student Achievement Graph	107
Appendix C: Answer Key.....	108

Amazing Mars

When NASA scientists sent two rovers to Mars, they thought the mission might last three months. "In my secret heart of hearts, I was hoping to stretch it out to six months," said Stephen Squyres, one of the scientists. More than a year later, the rovers were still going strong!

Spirit and *Opportunity* continue to roam the Red Planet and send back extremely clear pictures as well as other data. Earthlings are getting a better look at Mars than they had ever hoped.

Exploring the Red Planet

In 2004, *Spirit* touched down on Mars. *Opportunity* followed, landing on the opposite side of the planet. Both rovers got to work, digging into the soil and drilling into rocks, and sending back data about their findings. They were looking for signs of water.

As luck would have it, one rover landed inside a small crater created long ago by the impact of a meteorite. The walls of the crater gave *Opportunity* a look at ancient layers of Mars' crust. Scientists think the layers were created by a shallow lake that had periodically dried up and refilled. This information confirmed what scientists had long believed: water once flowed on Mars. Water could have nourished Martian life.

The presence of water on Mars doesn't prove that life once thrived there, but it's a promising sign that it could have. *Spirit* has uncovered soil that is more than half salt, adding to the evidence that there were oceans on the planet in the past. The rovers also have detected methane gas in the Martian air. Methane is produced by living organisms. If bacteria still live under Mars's surface, they could be releasing the gas.

Revealing More Secrets

The discoveries keep coming. The *Mars Express* orbiter found what may be huge slabs of ice from a frozen sea buried under a thick layer of dust.

Spirit has already unearthed the first meteorite found on another world. Both rovers will continue to lay bare the secrets of the Red Planet. *Spirit* recently climbed a hill, looking for new places to explore. *Opportunity* is heading south toward an area that may give scientists a look at deeper layers of rock and soil than they have seen so far.

The scientists are making the most of each Martian moment. "I have no idea how much longer (the rovers) will last," Squyres said. "So you plan for the long term—but each day you drive like there's no tomorrow."

Amazing Mars *(cont.)*

Directions: Answer the questions. You may use the article.

1. What is another name for Mars?

2. Which spacecrafts are on Mars? How long was their mission expected to last? Did the spacecrafts exceed the scientists' expectations? Why?

3. Discuss what the rovers have discovered so far about the Martian landscape and environment. Explain the significance of these discoveries to scientists' effort to prove that water and life once existed on Mars.

4. Explain the scientific significance of methane gas detected on Mars.

5. List three details about Mars you learned from reading this article. Use illustrations to bring these details to life. Use the back of this page to do your work.

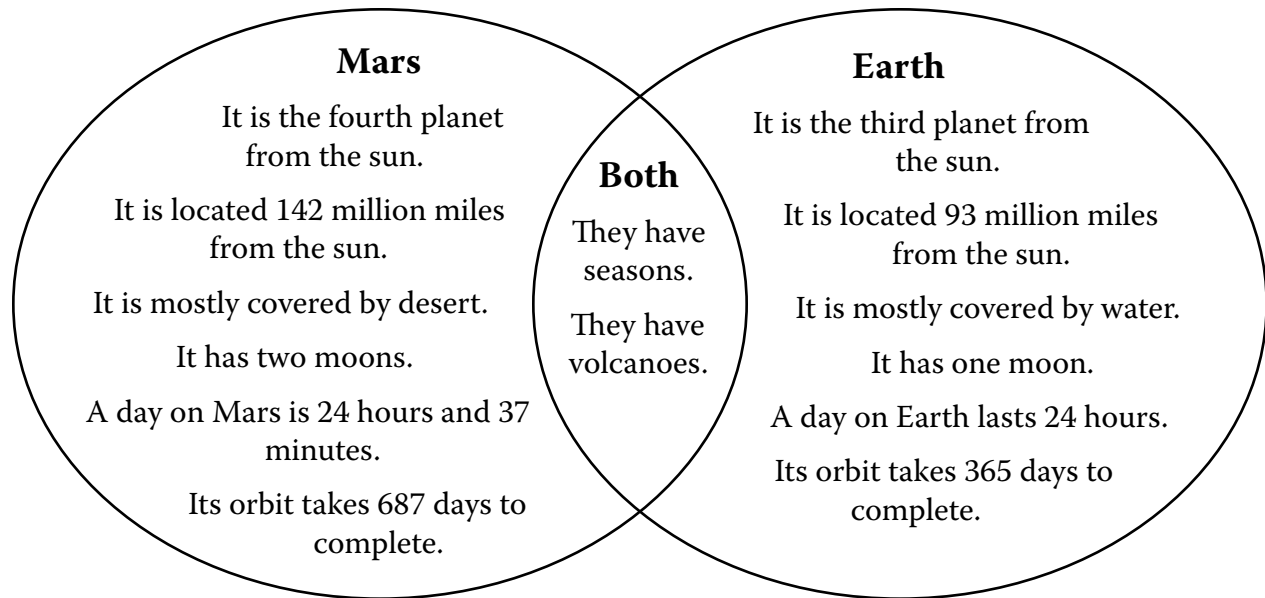
6. Using information you learned from reading the article, write a haiku about Mars.

Reminder: A haiku is a three-lined poem. The first and third lines each contain five syllables. The second line has seven syllables.

Amazing Mars *(cont.)*

Name the Planet!

Use the Venn diagram detailing the similarities and differences of Mars and Earth to help you complete the questions below.



1. Which planet takes longer to orbit the sun? How much longer?

2. Think of another similarity between Earth and Mars that is not listed. Describe all the ways the two planets are similar.

3. Imagine you are up in space looking down on Earth and Mars. What would you be able to tell about the landscapes of both planets?

Amazing Mars *(cont.)*

Document-Based Extension Activities

Students may work independently, or the teacher may copy this page and cut out the activities and distribute them to the students for completion in small groups.

1. Interview an older member of your family about what they thought Mars would be like. Did they ever imagine that proof that water once flowed on Mars would be discovered? Did they ever think that life on Mars was really possible?

2. Write a story describing what you think life would be like on Mars.

3. You and your crew have just been chosen to go on the next mission to Mars. Everything will be provided for you once you land on Mars. However, your journey to Mars will take nine months. Think about what you will need for the journey. Choose carefully, because you may only bring 10 items.

4. Write and illustrate the front-page newspaper article for the day life is discovered on Mars.