**A True Book: Mars**

By Elaine Landau

**Mars and Earth**

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| **Mars and Earth Comparison Table** |
| **Mars** | **Earth** |
| **Length of year:** 687 days | **Length of year:** 365 days |
| **Length of day:** 24 hours, 37 minutes | **Length of day:** 23 hours, 56 minutes |
| **Atmosphere:** Carbon dioxide (95.32%) Oxygen (0.13%)  | **Atmosphere:** Oxygen (21%) Carbon dioxide (0.038%) |

Mars is one of eight planets in our ***solar system.*** A solar system is like a giant neighborhood. The other planets are Mercury, Venus, Earth, Jupiter, Saturn, Uranus, and Neptune. Like the other planets in our solar system, Mars ***orbits,*** or travels around, the sun. It travels in a flattened circular path called an ***ellipse.***

Earth is the third planet from the sun, and Mars is the fourth. Because Mars is father away from the sun than Earth, it travels around the sun in a larger ellipse.

A year is equal to the time it takes for a planet to orbit the sun once. Earth orbits the sun in about 365 days. Mars orbits the sun in 687 Earth days. This means that a year on Mars I almost twice as long as a year on Earth.

While Mars orbits the sun, it also spins on its ***axis.*** An axis is an imaginary line that runs from north to south through the center of a planet. The time it takes a planet to spin around once on its axis equals one day. One day on Earth is 23 hours, 56 minutes long. One day on Mars is 24 hours, 37 minutes long. So a day on Mars is just 41 minutes longer than a day on Earth.

Mars is like the earth in many ways. Mars is a ***terrestrial*** planet. A terrestrial planet is made mostly of rock. It has a solid surface. Earth, Mercury, and Venus are the other terrestrial planets in our solar system.

The atmosphere on Mars is very different from the atmosphere on Earth. On Earth, the atmosphere has plenty of oxygen. People need oxygen to breathe. On Mars, the atmosphere is made mostly of a gas called carbon dioxide. There is some oxygen in the atmosphere. However, there is not enough oxygen for people to breathe.

**Could there be life on Mars?**

***Astronomers*** are scientists who study the planets, stars, and space. Many astronomersthink there might once have been life on Mars. What do astronomers look for when seeking life on other planets? They study a planet’s temperature, weather, and other conditions. Then they decide whether life might survive in such a place. One key ingredient they always look for is water. Water on another planet is a sign that life might exist there. Would astronomers find water on Mars?

To get a good look at Mars, astronomers at the National Aeronautics and Space Administration (NASA) send up space probes. Space probes are spaceships that travel without astronauts in them. The first probes to get close to Mars were the *Mariner* probes. The *Mariner* probes photographed Mars between 1965 and 1971. These pictures showed a dry planet, but the pictures also showed what looked like empty riverbeds. Had flowing water once helped to form Mars’s surface?

To find out more, two *Viking* space probes flew to Mars in 1976, and sent ***landers*** down to Mars’s surface. The landers gathered samples from the surface of Mars. The samples were tested, but there were no signs of water or life.

 **Sojourner, the Mars Rover**

To find out if there had ever been water on Mars, the *Mars Pathfinder* spacecraft took a small robotic ***rover*** to Mars in 1997. A rover is a type of vehicle that can explore the surface of Mars. The rover, called *Sojourner*, rolled out over the surface of the planet taking pictures and sampling the soil, rocks, and atmosphere of the dry planet. Pictures showed rocks in strange formations that may have been created by great floods millions of years ago.

Astronomers are planning more missions to Mars. Other people hope to send humans to Mars someday. Maybe in your lifetime, humans will go there. You could be one of the first people to visit!

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1. The author most likely wrote this passage to

⃝ Encourage readers to become astronauts

⃝ Give readers information about Mars

⃝ State an opinion about space travel

⃝ Tell a story to entertain the reader

1. Which of these questions could you answer correctly by reading this passage?

 ⃝ Which planet is larger; Mars or Earth?

 ⃝ What kind of life was on Mars?

 ⃝ Could people breathe on Mars?

 ⃝ Does Mars have any moons?

1. This passage would most like be found in a book about

 ⃝ Space travel

 ⃝ Dinosaurs

 ⃝ Stars and meteors

 ⃝ The Solar System

1. Since 1967, scientists have sent spaceships to Mars to find out more about the planet. Which name completes the graphic organizer?

**?, 1997**

**Viking, 1976**

**Mariner, 1965**

 ⃝ Mars Pathfinder

 ⃝ Mars Space Shuttle

 ⃝ NASA

 ⃝ Landers

1. All the planets in our solar system orbit around the sun in a flattened circular path called an ***ellipse.***  Which one of the shapes below is an ellipse?

 ⃝

 ⃝

 ⃝

 ⃝

1. Why is a year longer on Mars than on Earth?

 ⃝ Mars is farther away from the sun.

 ⃝ Mars is closer to the moon.

 ⃝ It takes Mars longer to orbit the Sun.

 ⃝ It takes Mars longer to orbit the Moon.

1. In the first paragraph under the heading ***Could there be life on Mars?*** the pronoun they refers to –

 ⃝ Planets

 ⃝ Astronomers

 ⃝ Spaceships

 ⃝ People

1. What question can you answer by studying the ***Mars and Earth Comparison Table***?

 ⃝ How many miles is Mars from the Sun?

 ⃝ How many days make a year on Mars?

 ⃝ Are Mars and Earth the same size?

 ⃝ Does Mars look like Earth?

**Open Response:**

The passage gives information about three probes NASA astronomers sent into space to gather information about Mars. Name each of the probes, and list one piece of information each probe sent back to the NASA scientists. Use specific information from the passage to support your response.