

Name _____



Venus: Earth's Mysterious Neighbor

Venus is often called Earth's "sister planet" because of its similar size and location in our solar system. However, Venus is a world of extremes, with a scorching hot surface, a thick, toxic atmosphere, and a unique set of characteristics that make it a fascinating planet to study.

Venus's Basics

Venus is the second planet from the Sun, located between Mercury and Earth. It is approximately 67 million miles away from the Sun. Its diameter is very close to Earth's, with Venus being just slightly smaller. One day on Venus, known as its rotation period, is longer than its year, taking 243 Earth days to complete a full rotation. In contrast, its orbit around the Sun, or its year, takes only about 225 Earth days.

Venus's Atmosphere

Venus has one of the most inhospitable atmospheres in the solar system. It is composed mainly of carbon dioxide (about 96%), with traces of nitrogen and sulfur dioxide. The atmosphere is extremely thick and traps heat, creating a runaway greenhouse effect. This effect results in surface temperatures that can soar up to 900 degrees Fahrenheit (475 degrees Celsius), making Venus the hottest planet in our solar system, even hotter than Mercury, which is closer to the Sun.

Surface Features

The surface of Venus is rocky, and it is covered in various types of terrain. There are highland regions with mountains and plateaus, and there are also vast lowland plains. Venus has numerous volcanoes, including some of the largest in the solar system. One famous example is Maxwell Montes, which is higher than Mount Everest, the tallest mountain on Earth.

Atmospheric Pressure

Venus's thick atmosphere exerts a tremendous amount of pressure on its surface. If you were standing on Venus, you would feel pressure about 90 times greater than what you experience on Earth. This high pressure would instantly crush most spacecraft and equipment sent to the planet's surface.



Name _____

Clouds and Winds

Venus has thick cloud layers that completely obscure its surface when observed from space. These clouds are composed of sulfuric acid droplets and reflect sunlight, giving Venus its bright appearance in the sky. Venus experiences extreme winds in its upper atmosphere, with hurricane-like winds reaching speeds of up to 200 miles per hour (320 kilometers per hour).

The Venusian Day and Night

Venus's slow rotation means that its day and night are very long. A day on Venus (one complete rotation) lasts longer than its year, as mentioned earlier. Venus rotates in the opposite direction to most planets, including Earth, so the Sun rises in the west and sets in the east.

Space Exploration of Venus

Many space missions have been sent to Venus to study this mysterious planet. These missions have included orbiters, landers, and even atmospheric probes. The data collected from these missions have helped scientists learn more about Venus's atmosphere, geology, and history.

The Venusian Mystery

Despite all the research and exploration, Venus remains a planet with many mysteries. Scientists are still trying to understand why Venus's climate turned into a scorching hellscape while Earth's remained habitable. Some theories suggest that a runaway greenhouse effect, caused by the buildup of carbon dioxide, played a significant role.

In conclusion, Venus is a planet of extremes, with a thick, toxic atmosphere, scorching temperatures, and a rocky surface. Despite its similarities to Earth in terms of size, it is a world vastly different from our own. It continues to captivate scientists and astronomers, offering a unique puzzle in our exploration of the solar system.

