

The Planets

The solar system consists of the sun and all of the objects in its orbit. This includes asteroids, comets, dwarf planets (such as Pluto – the demoted planet) and the eight recognised planets. Of these planets, there are four inner rocky planets (Mercury, Venus, Earth and Mars) and four outer gas giants (Jupiter, Saturn, Uranus and Neptune). Each is a different world with its own characteristics.

Mercury

The closest planet to the sun is also the smallest recognised planet being just a little bigger than our moon. Mercury is named after the Roman messenger god because it is the fastest of the planets: it takes the equivalent of 88 Earth days to orbit the sun at a speed of 29 miles per second. However, it rotates slowly and a day on Mercury is actually longer than a year, lasting approximately 176 Earth days.

Venus

Earth's closest neighbour is an inhospitable place shrouded in toxic gases which hold in heat and make Venus the hottest planet in the solar system. Due to temperatures of 475°C, lead would melt on Venus like ice cubes do on Earth. Like Mercury, a day on Venus is longer than a year.

Earth

Our home planet is the only planet in the solar system to have liquid water on the surface. Indeed, water covers 71% of the Earth's surface meaning that it is often called 'The Blue Planet'. This, together with the breathable air and the moderate temperatures, make it possible for life to have flourished here – the only planet yet discovered which holds life.

Mars

The Red Planet, as it is known, is a land of deserts, volcanoes and craters. Though water was once flowing on Mars, it is now only present in the form of ice. Nonetheless, the evidence of liquid water has prompted scientists to wonder if Mars might once have harboured life and such questions are one reason that Mars has been studied and explored more than any other.

Jupiter

The biggest planet by some margin, Jupiter is more than twice as big as all of the other planets



combined. It is characterised by its stripes and the famous spot: a storm which has been continuing for over a century. Jupiter has more than 75 moons with some of these being current candidates in the search for life beyond Earth.

Saturn

Saturn is best known for its spectacular rings which are made up of fragments of rock and ice. Like Jupiter, it has many moons - potentially more than 80. Saturn has the lowest density of all the solar system's planets: if there were a basin of water big enough, Saturn would float on it!

Uranus

A cold, distant and relatively unknown world, Uranus was the first planet to be discovered through the use of a telescope. Curiously, Uranus rotates on its side like a ball rolling along the ground rather than like a spinning top as other planets do. This was most likely the result of a collision. It is also one of only two planets, along with Venus, to spin in the opposite direction.

Neptune

Neptune's existence was first predicted mathematically. Uranus did not orbit quite as it should and these discrepancies caused scientists to suppose that there was another planet pulling on it. This cold, dark and windy planet was subsequently observed using telescopes. At 30 times further from the sun than the Earth, it has not been studied in any depth. Like Uranus, there is so much more to discover about this distant world.

VOCABULARY FOCUS

1. What does 'demoted planet' tell us about Pluto's status?
2. What does inhospitable tell us about Venus?
3. Which word in the section on Earth is an antonym of 'extreme'?
4. What are 'discrepancies'?
5. What does subsequently mean?

VIPERS QUESTIONS

R

Which planet orbits the fastest?

S

What challenges would a mission to Venus face?

R

Why is Venus so hot?

E

How can we tell that scientists do not know the number of moons orbiting Saturn?

P

Which planets do you predict will be a priority for future space missions and why?