

The Solar System - Planet's information

This information gap activity was developed by Steve Cooke in 2008. It consists of eight planet descriptions (Earth is not included) and four description sheets.

Modified by Joan Nievas (2016) changing the description sheets to a Moodle questionnaire and adding information about The Earth.

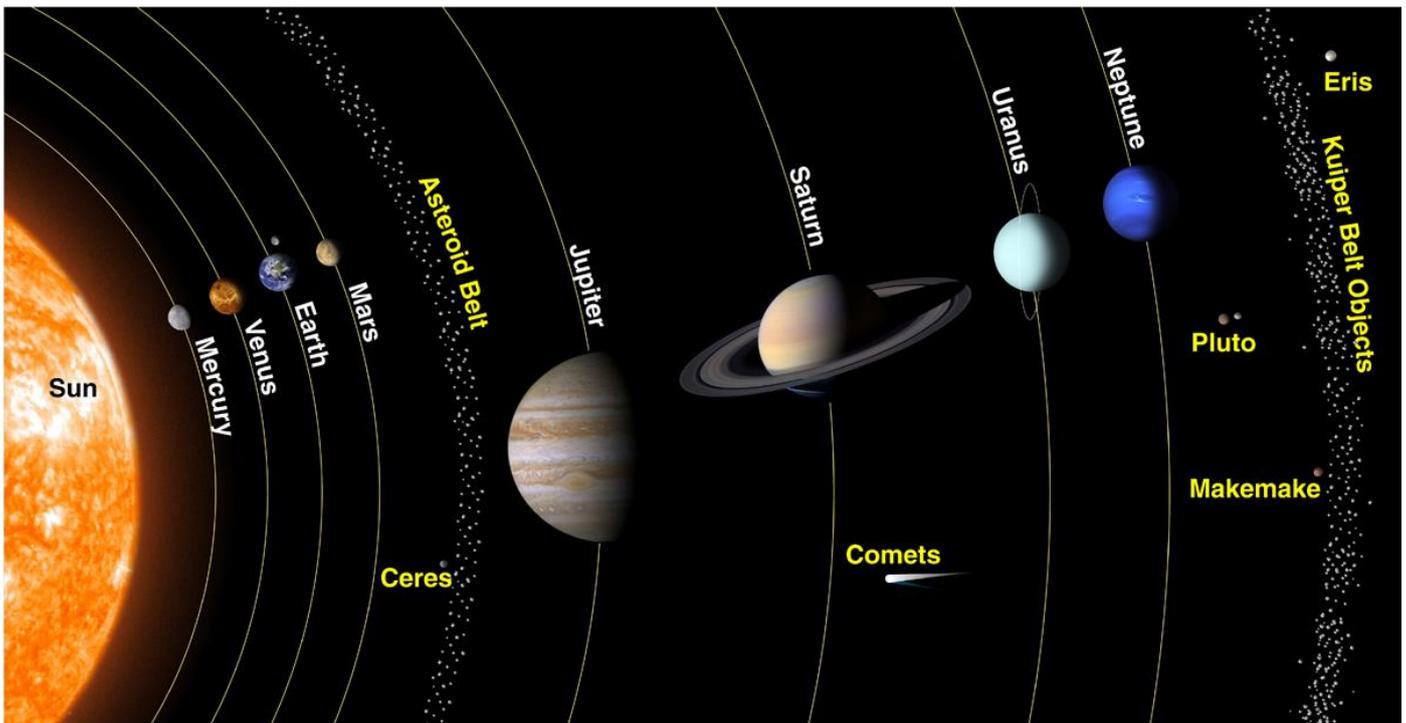
The idea behind this activity is that students work in pairs and extract the information using this document. Each student fills their own questionnaire.

<http://www.collaborativelearning.org/planetjigsaw.pdf>

<http://www.cienciasvirtuales.com/CN1ESO/T01/Planetjigsaw.pdf>

<http://www.cienciasvirtuales.com/moodle/mod/quiz/view.php?id=223>

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Mercury

Mercury is named after the Roman Messenger of the Gods. Mercury is quite a small planet. It has a diameter of about 4,900 km which means that it is about 2,5 times smaller than the Earth.

Mercury does not have any moons. It has no atmosphere, and so the temperatures on the surface vary greatly. During the day it can be as hot as 430°C and at night it can be as low as -180° C. Even though it is near the Sun (it is about 58 million km from the Sun), it gets cold at night, because there is no atmosphere to stop the heat radiating away from the surface.

A day on Mercury is very long. It takes about 1,400 hours to rotate once on its axis, which means that a day is nearly 60 times longer than on Earth. However, a year on Mercury is quite short because it only takes about 3 months to orbit the Sun.

The gravity on Mercury is quite low. It is about 4 n/kg which means that it is nearly 2,5 times less than on Earth. Therefore, on Mercury you would weigh 2,5 times less and be able to jump 2,5 times higher than on Earth.



Venus

Venus is named after the Roman Goddess of Love. It is a little bit smaller than Earth. It has a diameter of about 12,000 km.

A day on Venus is very long because it takes 5,830 hours (that's about 240 Earth days) to rotate once on its axis. However, a year on Venus is shorter than on Earth because it only takes about eight Earth months to orbit the Sun.

It is very hot on Venus because it is near the Sun. It is about 108 million km from the Sun. Also it has an atmosphere made up of carbon dioxide. The atmosphere keeps the heat in and acts as an insulator. This means that the temperature on the surface of Venus is about 465° C. Venus does not have any moons.

The force of gravity on Venus is about 9 n/kg which means that it is slightly less than on Earth. That means that on Venus you would weigh slightly less than on Earth and you would be able to jump slightly higher.



Earth

Gravity=9,8 n/kg

The Earth takes 365.25 days to complete its orbit around the Sun. The Earth's year is therefore 365 days long but the 0.25 days are added up and every fourth year has one extra day, on the 29th of February. This fourth year is called a Leap Year (366 days).

The Earth is unlike every other planet in the Solar System in a number of different ways: It is the only planet that has an atmosphere containing 21 percent oxygen, it is the only planet that has liquid water on its surface and it is the only planet in the solar system that has life.

The Earth is the only inner planet to have one large satellite, the Moon. Mars has two very tiny moons. Mercury and Venus have none.

As the Earth orbits round the Sun it turns on its axis, rotating right round in 24 hours. The side of the Earth that faces the Sun has daytime and the side of the Earth that is turned away from the Sun has night-time. When it is daytime in Spain, it is night-time on the opposite side of the Earth in Australia.

The Earth is 150 million kilometres from the Sun. We can also say that the Earth is 1 AU from the Sun. Astronomers (people who study the planets and stars) use a measurement called an Astronomical Unit, AU. Earth's measurements are taken as the standard for this system, so Earth is 1 AU from the Sun.

The Earth's diameter, the distance round its middle at the Equator, is 12,760 kilometres. The Earth is not an exact sphere. The diameter going round the North and South Poles is slightly less than the diameter round the Equator. The Polar diameter is 12,700 kilometres.



Mars

Mars is named after the Roman God of War. It is further away from the Sun than Earth. It is about 228 million km from the Sun. It takes about 23 months to orbit the Sun, and so a year on Mars is nearly twice as long as on Earth. However, a day on Mars is nearly the same length as on Earth. It takes about 25 hours to rotate once on its axis.

Unlike Earth, Mars has two moons, Deimos and Phobos. Mars is also smaller than Earth. In fact it is a bit more than half the size of Earth, as it has a diameter of 6,800 km. It has a very thin atmosphere, which is mostly made up of carbon dioxide.

Temperatures on Mars vary quite a lot. During the day it can be 25° C and at night it can be as low as -120° C.

The gravity on Mars is about 2,5 less than on Earth. That means that on Mars you would weigh 2,5 less than on Earth and you would be able to jump 2,5 times higher.



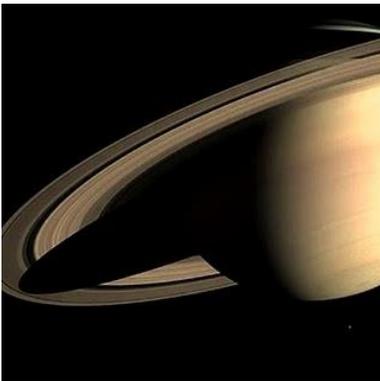
Jupiter

Jupiter is named after the Roman King of the Gods. It is a very big planet. It has a diameter of about 143,000 km. which means that it is about eleven times bigger than Earth. It is about 778 million km. from the Sun.

Therefore it takes about 142 months to orbit the Sun and so a year lasts 12 times longer than on Earth. However, a day on Jupiter is shorter than on Earth as it only takes 10 hours to rotate once on its axis.

The temperature on Jupiter is low. On the surface it is about -150 C. Its atmosphere is made up mostly of hydrogen. The force of gravity on Jupiter is very strong. It is about 26 n/kg. This means that on Jupiter you would weigh about 2,5 times as much as on Earth and you would find it very difficult to jump off the ground.

Another difference between Jupiter and Earth is that Jupiter has 28 moons whereas Earth only has one.



Saturn

Saturn is named after the Roman God. It is about 1,427 million km. from the Sun. It takes about 354 months to orbit the Sun once and so a year on Jupiter is nearly 30 times longer than on Earth. Saturn is a big planet. It has a diameter of about 121,000 km and so it is much bigger than Earth, nearly 10 times bigger in fact. Its atmosphere is made up mostly of hydrogen.

A day on Saturn is quite short. It takes Saturn 11 hours to rotate once on its axis. It is cold on Saturn. The temperature on the surface is about -180 C.

The force of gravity on Saturn is less than on Earth. It is about 9 n/kg. This means that on Saturn you would weigh slightly less than on Earth and so you would be able to jump slightly higher. Another fact that makes Saturn different from Earth is that it does not have just one moon, it has thirty.



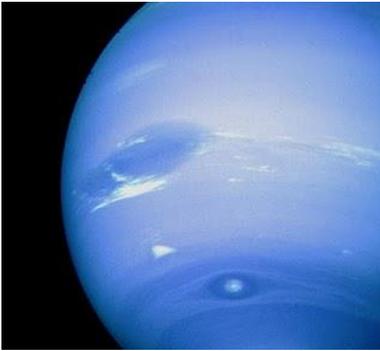
Uranus

Uranus is named after the Roman God. It is about 4 times bigger than Earth. It has a diameter of about 50,500 km. It is about 2,571 million km from the Sun which means that it is about 16 times further from the Sun than Earth. Uranus takes about 1008 months to orbit the Sun and a year on Uranus is about 84 years on Earth. However, a day on Uranus is shorter than on Earth because it only takes Uranus 17 hours to rotate once on its axis.

Uranus has an atmosphere which is made up mostly of hydrogen. Because it is a long way from the Sun it is cold on Uranus. The surface temperature is about -210

C. Uranus has more moons than Earth.

It has ten moons. Also, the force of gravity on Uranus is slightly different than on Earth. Gravity is about 8 n/kg which means that you would weigh slightly less on Uranus than you would on Earth.



Neptune

Neptune is named after the Roman God of the Sea. It is about 4,497 million km. from the Sun and so it about thirty times further from the sun than Earth.

Because it is a long way from the Sun it is very cold on Neptune. The surface temperature is about -210 C. Also, a year on Neptune is very long as it takes 1,978 months (that's nearly 165 years) to orbit the Sun once. However, a day on Neptune is shorter than on Earth. It takes Neptune 16 hours to rotate once on its axis.

Neptune is bigger than Earth. In fact it is nearly 4 times bigger than Earth as it has a diameter of about 49,500 km. The force of gravity on Neptune is slightly stronger than on Earth. Gravity is 11 n/kg on Neptune which means that you would weigh slightly more on Neptune than on Earth. Another difference between Neptune and Earth is that Neptune has 8 moons whereas Earth only has one.



Pluto (dwarf planet)

Pluto is named after the Roman God. It is quite a small planet. It has a diameter of about 2,300 km. This means that it is about 5 times smaller than Earth. Pluto is a long way from the Sun. It is about 5,913 million km. from the Sun which means that it is about 40 times further away from the Sun than the Earth. Because it is a long way from the Sun, it takes Pluto a long time to orbit the Sun. In fact it takes Pluto 2,982 months (that's nearly 250 years) to orbit the Sun and so a year on Pluto is very long. It also takes Pluto quite a long time to rotate once on its axis. A day on Pluto lasts about 153 hours.

It has an atmosphere which is made up mostly of nitrogen. It is very cold on Pluto and the surface temperature is about -230 C. Although Pluto is very different from Earth it does have one similarity. Like the Earth, Pluto has only one moon. Its name is Charon.