OUR SOLAR SYSTEM

The Solar System consists of eight planets, five dwarf planets, over one hundred and eighty moons and countless asteroids, comets and rocks!

The eight planets in order of increasing distance from the Sun are:

Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.

The Solar System is filled with out-of-this-world objects and fascinating features . It's your task to fill in the grid using the space facts below to discover more about the planets in our solar system *(some words may be used more than once).*

NAME	DISTANCE TO THE SUN	LENGTH OF ONE DAY	LENGTH OF ONE YEAR (1 ORBIT OF THE SUN)	RADIUS	PLANET TYPE
Mercury	57 million km		88 days		
Venus		5832 hours		6,051.8 km	
Earth		24 hours	364.25 days		Terrestial
Mars	228 million km			3,389.5 km	
Jupiter			4,333 days		Gas Giant
Saturn		11 hours			
Uranus	2.9 billion km		30,687 days	25,362 km	Ice Giant
Neptune		16 hours		24,622 km	

SPACE FACTS

Terrestrial Gas Giant Ice Giant 108 million km 1.43 billion km 779 million km
150 million km 4.5 billion km 1,408 hours 17 hours 10 hours 25 hours
225 days 60,190 days 687 days 10,759 days 6,371 km 2,439.7 km 69,911 km 58,232 km

Colour and label the planets on page 2. Research the planets to make them look as realistic as possible. Are there any colours that surprise you?

CHALLENGE: Create a rhyme or poem to remember the planets in the correct order!

M_ _ _ _ _ _

SPACE FACT! Jupiter has 79 known moons including Io, Europa and Callisto. It also has the biggest moon in the Solar System which is called Ganymede.

V_ _ _ _

57 MILLION KM

E_ _ _ _

108 MILLION KM

228 MILLION KM

ASTEROID BELT

149 MILLION KM

M_ _ _

J_ _ _ _ _ _

SPACE FACT! The asteroid belt can be found between the orbits of Mars and Jupiter and contains many thousands of irregular sized rocks!

780 MILLION KM

1437 MILLION KM

S_ _ _ _ _

U_ _ _ _ _

2871 MILLION KM

SPACE FACT! Neptune is the smallest 'giant' and the furthest from the Sun. A year on Neptune lasts 165 Earth years!

4539 MILLION KM

N_ _ _ _ _ _

THE DWARF PLANETS

In 2006 the International Astronomical Union (IAU) created a new class of object: dwarf planets. Pluto had been previously classified as a planet ever since its discovery in 1930, but in 2006 was reclassified as a dwarf planet. Pluto is not the only dwarf planet in the Solar System. There are five dwarf planets but there could be many more!

What is a dwarf planet?

Dwarf planets are similar to planets as they have enough mass (and gravity) to be nearly round and both orbit the Sun.

But, dwarf planets such as Pluto may not have a clear path around the Sun - their orbits may contain other objects such as asteroids.

The five classified dwarf planets are Eris, Ceres, Pluto, Huamea and Makemake.

Ceres is the largest object in the asteroid belt.

Eris is similar in size to Pluto.

A day on Makemake is similar to Earth's and lasts 22.5 hours, but its year lasts 305 Earth years!

Huamea has rings!

Image credit: NASA/Johns Hopkins University Applied Physics Laboratory/Southwest Research Institute

One day on Pluto lasts 153 hours and one year is 248 Earth years!

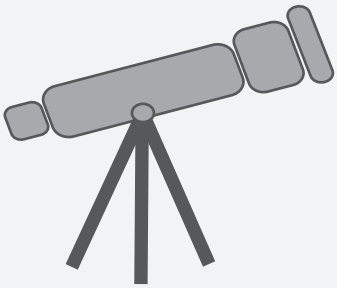
Pluto has 5 moons: Charon, Hydra, Kerberos, Nix and Styx.

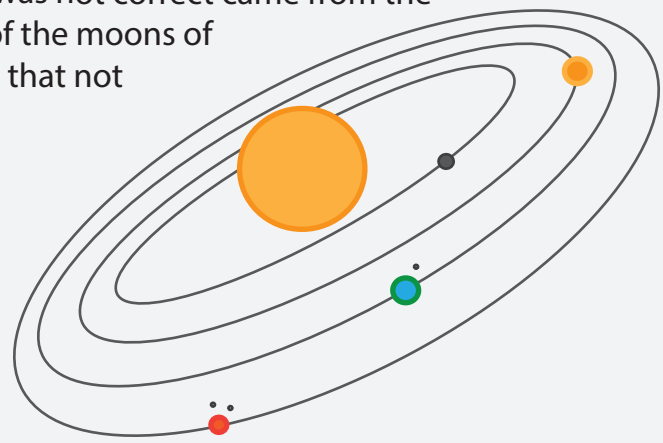
MODELS OF THE SOLAR SYSTEM

The heliocentric model of the solar system is one we would recognise today. In the **heliocentric model, the Sun is at the centre of the solar system** and all the planets orbit around it. However ideas about the Solar System have changed many times throughout history.

The geocentric model is an example of one model put forward before the telescope was invented. The **geocentric model put the Earth at the centre**, with the moon, Sun and planets orbiting around it.

One piece of evidence that the geocentric model was not correct came from the famous astronomer Galileo and his observations of the moons of Jupiter. The moons orbited Jupiter, and suggested that not everything orbits the Earth.





HOW TO SPOT THE PLANETS FROM HOME

Use the guide below to help you spot the planets from the comfort of your own window or garden. This guide is accurate for 2020 but can be used to help you spot planets in future years.

The planets are all orbiting the Sun at different speeds and so the positions of the planets in the nights sky change. For month by month advice and maps to help you spot planets try the BBC Sky at Night observing guides.

MERCURY

Mercury will be small in the sky and have a yellow hue - so this is easily mistaken for a star! It is easiest to spot in the early evening just after sunset or in the morning just before sunrise. You'll find it close to the horizon.

JUPITER

Jupiter is the largest planet in the Solar System and shines brightly in the night sky (the only planet brighter is Venus). Jupiter will shine with a silver hue and will be easier to spot in the mornings until July, or evenings later in the year.

URANUS AND NEPTUNE

Uranus and Neptune are relatively faint and difficult to spot with the naked eye. A clear sky as well as a small telescope or binoculars are needed to spot them.

VENUS

Venus is the closest planet to the Earth and so will shine brightly in the sky! It shines with a silver hue. Venus will be one of the brightest objects in the night sky.

MARS

Mars is also known as the Red Planet for a reason - and will have a red/orange hue in the night sky. Mars will be low in the sky (when viewing from the UK) but may be hard to spot.

SATURN

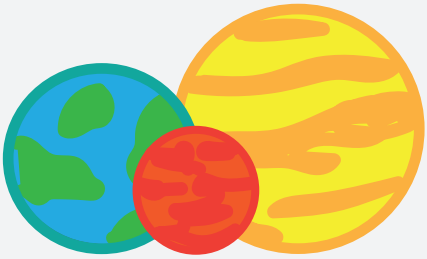
Saturn will appear yellow-white in the sky and during 2020 will appear close to Jupiter in the night sky (Jupiter will be the brighter object). The famous rings of Saturn can only be seen with a telescope and this majestic planet will be easiest to spot in the morning.

PLANETARY CRAFTS IDEAS

Planet Bath Bombs

Create planetary bath bombs by following a bath bomb recipe, such as on the BBC Good Food website or on the GeoBus YouTube channel.

Use a variety of shades of food colouring to make them look like a planet in the solar system - or create a brand new planet and name it!



Planet in a Jar

Create a planet in a jar, like a snow globe but with glitter stars instead of snow. Instructions to make a DIY snowglobe can be found online at PBS kids.

Use a plastic planet, or make out of crafting clay, making sure it is waterproof. Suspend it in your jar using wire, then add glitter to create twinkling stars whenever you shake your globe.