

# Space

National curriculum Objectives:

- describe the movement of the Earth, and other planets, relative to the Sun in the solar system
- describe the movement of the Moon relative to the Earth
- describe the Sun, Earth and Moon as approximately spherical bodies

# Science in the news today

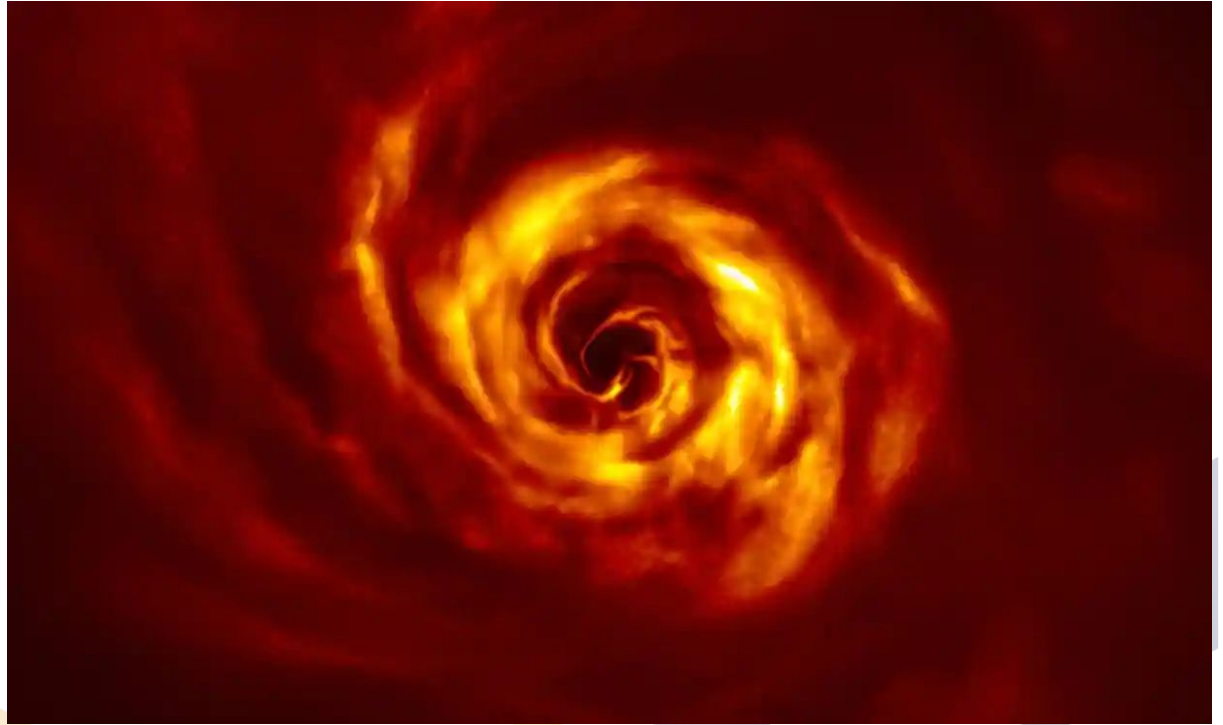
Scientists have taken the first ever image of a new planet being born. The image was taken using one of the worlds strongest telescopes - the Very Large Telescope (yes, that's its name!) in Chili. The telescope can detect images four billion times better than the human eye and has captured wonderful images. This new planet is 50 trillion (50 000 000 000 000) kilometers away from Earth!

This is the first time scientists have been able to observe a new planet forming, and it will allow them to get more detailed information of what actually happens.

Planets are formed when dust and rocks clump together in space over time. Scientists believe that this picture shows the exact point at which the planet is forming, at the meeting of the two spirals in the centre of the image - in bright yellow.

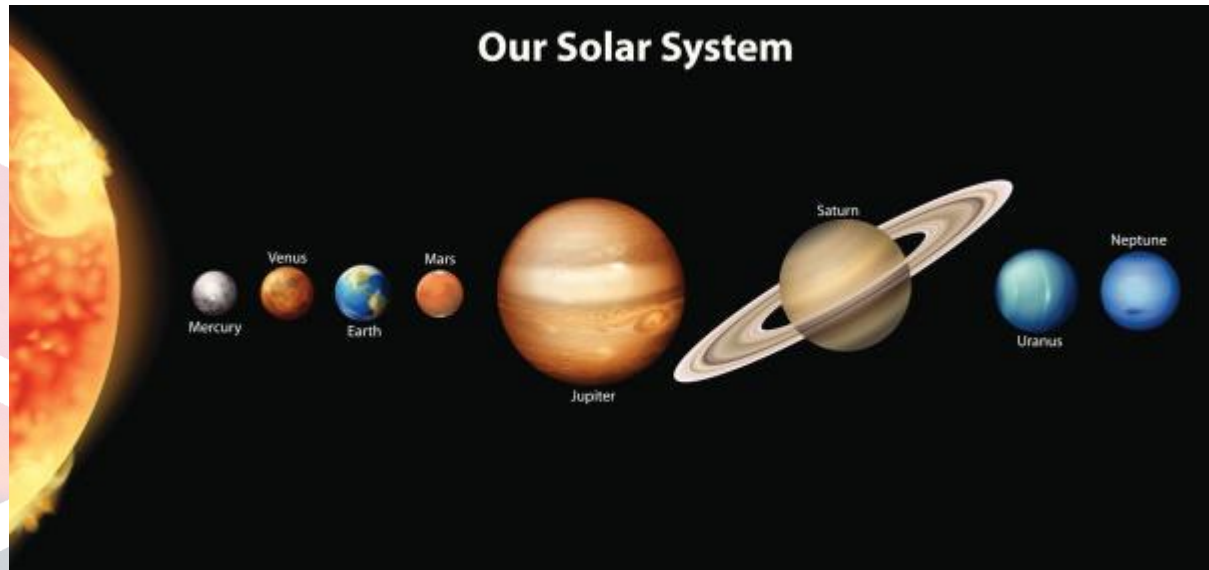
# Here is a picture of a new planet forming

A new planet forming in  
space 50 000 000 000 000  
kilometers away!



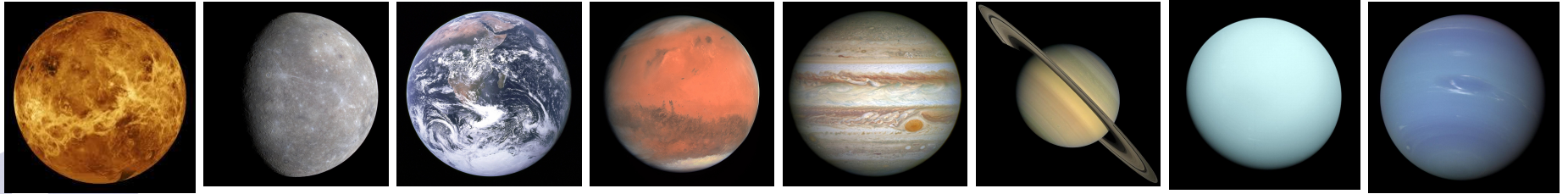
# What is the solar system?

The solar system is the Sun, a giant star at the center, and everything that orbits, or travels around it. This includes the eight planets and their moons, dwarf planets, asteroids, comets, and other small objects.



# The order of the planets

The 8 planets that orbit around the Sun are:



Mercury

Venus

Earth

Mars

Jupiter

Saturn

Uranus

Neptune

These planets are all spherical in shape. A sphere is a round, ball like shape.

The images above are in the order the planets are moving away from the Sun. Here is a phrase that might help you remember the order:

**My Very Enthusiastic Mother Just Served Us Noodles!**

# How do planets orbit the sun?

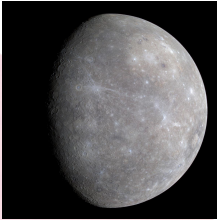
One journey around the sun is called an orbit.

All of the planets in the solar system orbit the sun. It takes the different planets different amounts of times to orbit the sun, depending on how far away they are.

How long each planet takes to orbit the sun:



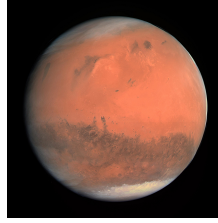
Mercury  
188  
days



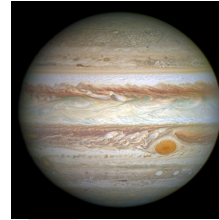
Venus  
225  
days



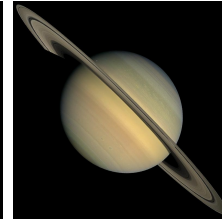
Earth  
1 year



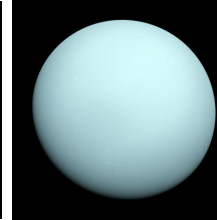
Mars  
687  
days



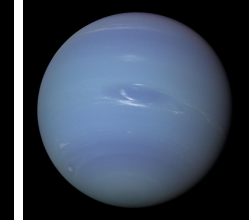
Jupiter  
12 years



Saturn  
29 years



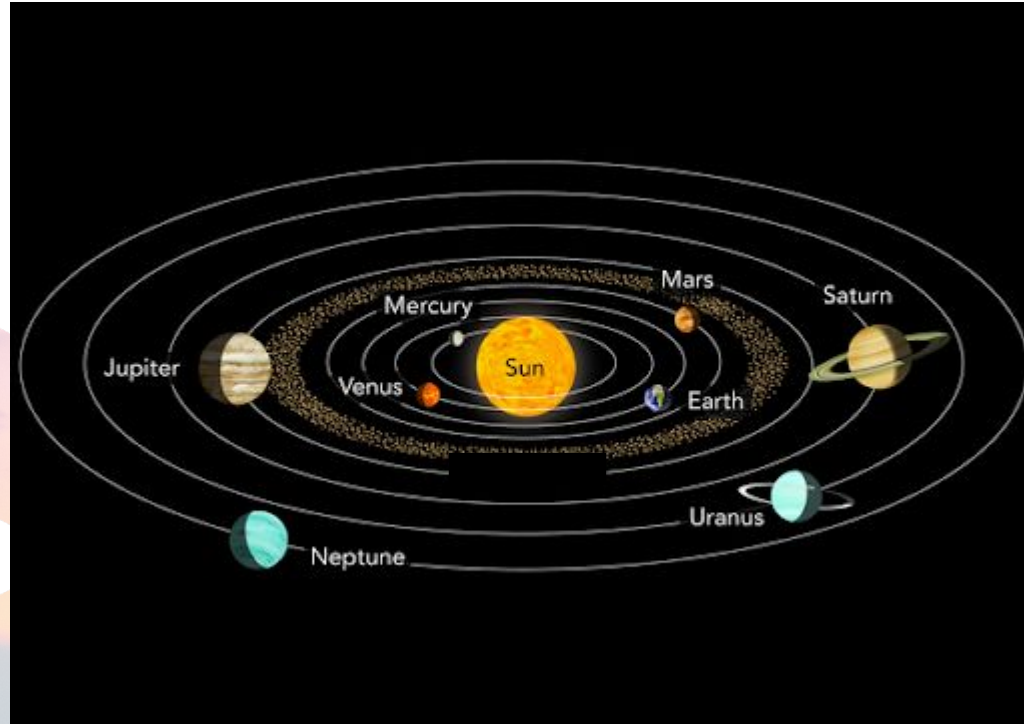
Uranus  
84 years



Neptune  
165 years

# How do planets orbit the sun?

This is another picture of all the planets orbiting the sun . The white lines around the sun show the route the different planets take as they travel around :



# What else is in the solar system?

There are other things in the solar system called 'celestial bodies'. These are big and spherical, like the planets, but they don't orbit around the sun. Can you think of something like this? Something we see every night...?

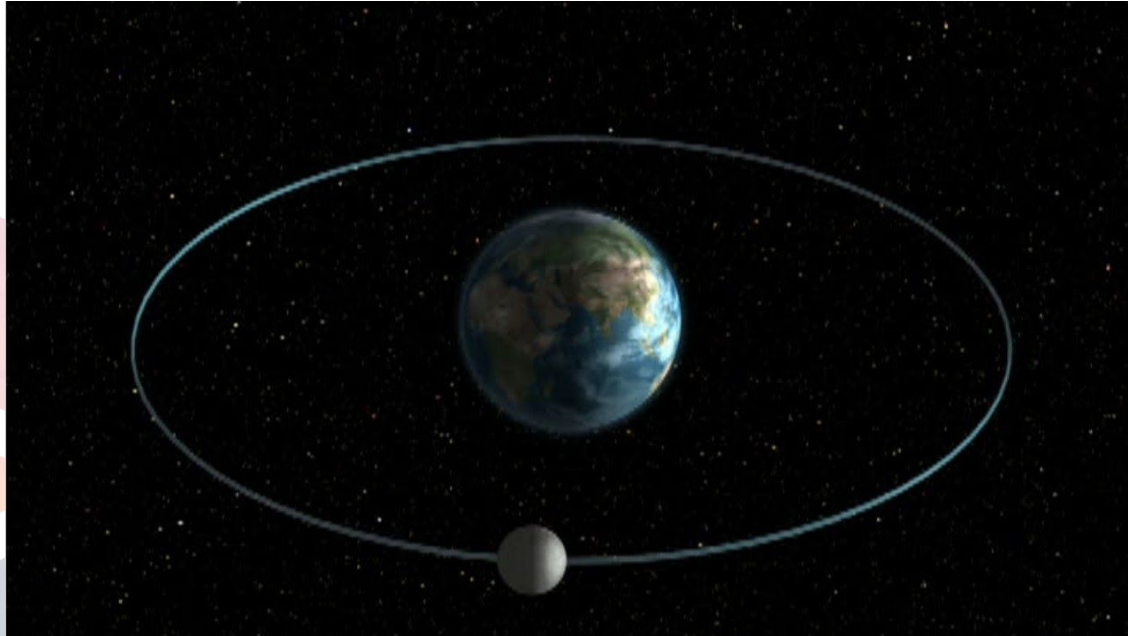
The Moon! The Moon is a celestial body, it orbits around the Earth, just like the Earth orbits the Sun.

Earth is not the only planet to have a moon. Mars, Jupiter, Saturn, Uranus and Neptune all have moons of their own too - Jupiter actually has over 60 moons!



# How does the moon orbit the earth?

Just like the planets orbit the sun, the moon orbits the Earth. It travels around the Earth while the Earth rotates on its axis:



# How does the solar system relate to our lives?

We measure a lot of things based on the movements of planets in the solar system.

- 1 year is the time it takes Earth to orbit once around the sun.
- 1 month is roughly the time it takes the Moon to orbit the Earth (about 28 days)
- 1 day is the time it takes the Earth to spin on its axis.

# Make your own mini solar system

## What do you need?

- Card and paper
- Colouring pens or pencils
- Scissors (always ask an adult before you use scissors)
- A mug (optional)
- String or wire (optional)
- A hanger (optional)



## Instructions:

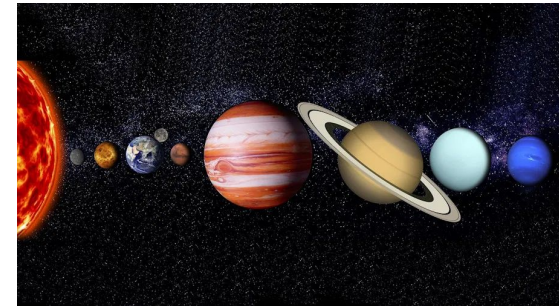
1. First, draw a circle about the size of a tennis ball, on a piece of card. If you have a mug, you can draw around it. This will be the Sun so colour it orange, red and yellow.
2. Next, draw 2 circle about the size of a ping pong ball, on the card. Add an oval ring to one of them as this will be Saturn. The other is Jupiter. Using images of Saturn and Jupiter from previous slides of this lesson, colour these too.
3. Then, draw 4 circles about the size of a marble. These are Mercury, Mars, Venus and Earth so colour these appropriately too.
4. After that, draw 2 circles (and this is a bit trickier) that are bigger than a marble but smaller than a ping pong ball! These are Neptune and Uranus. You'll need your blue colours for those.
5. Finally, cut all these circles out and either stick them to a piece of paper (in the correct order of course!) or, if you have string and a hanger, make a small hole in each planet, thread string through and tie (again in the correct order!) along the hanger.

# Come up with your own acronym!

**What do you need?**

- A pen, paper and imagination!

**This is a really useful thing to do to remember the order of the planets. If you make up a fun and silly acronym now, you will probably remember it forever!**



## **Instructions:**

1. List out the first letters of the planets going down the left hand side of the page. (MVEMJSUN)
2. Think of some phrases using the start of each word as the initial letter of the planet names.
3. Repeat until you have come up with a phrase you'll love and remember!
4. If you wanted to, you could fit your new phrase into a catchy song too!

We would love to see the ones you've come up with, so please take a photo and send it to [outreach@sciencecreates.co.uk](mailto:outreach@sciencecreates.co.uk).