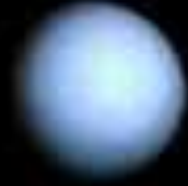
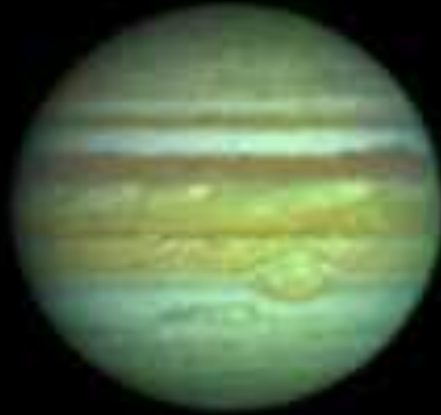
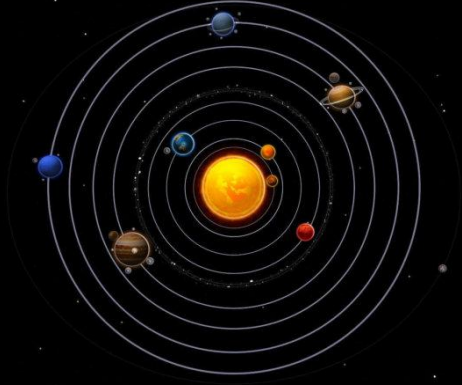


The solar system



What is the solar system?



- The Sun, its planets and other objects in orbit are all together known as the solar system.

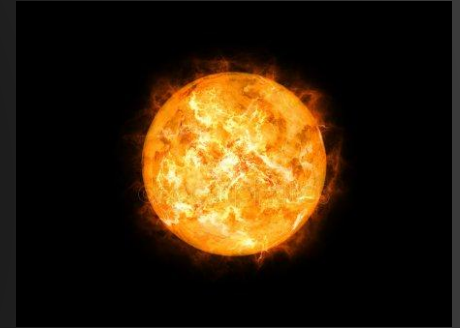
The nine planets

(starting with the closest to the Sun)

- 1) **Mercury** (the nearest planet to the sun)
 - 2) **Venus** (The hottest planet)
 - 3) **Earth**
 - 4) **Mars**
 - 5) **Jupiter**
 - 6) **Saturn**
 - 7) **Uranus**
 - 8) **Neptune**
 - 9) **Pluto (GAS)**
-

How do these planets move?

- The Sun is a star which the nine planets move around.

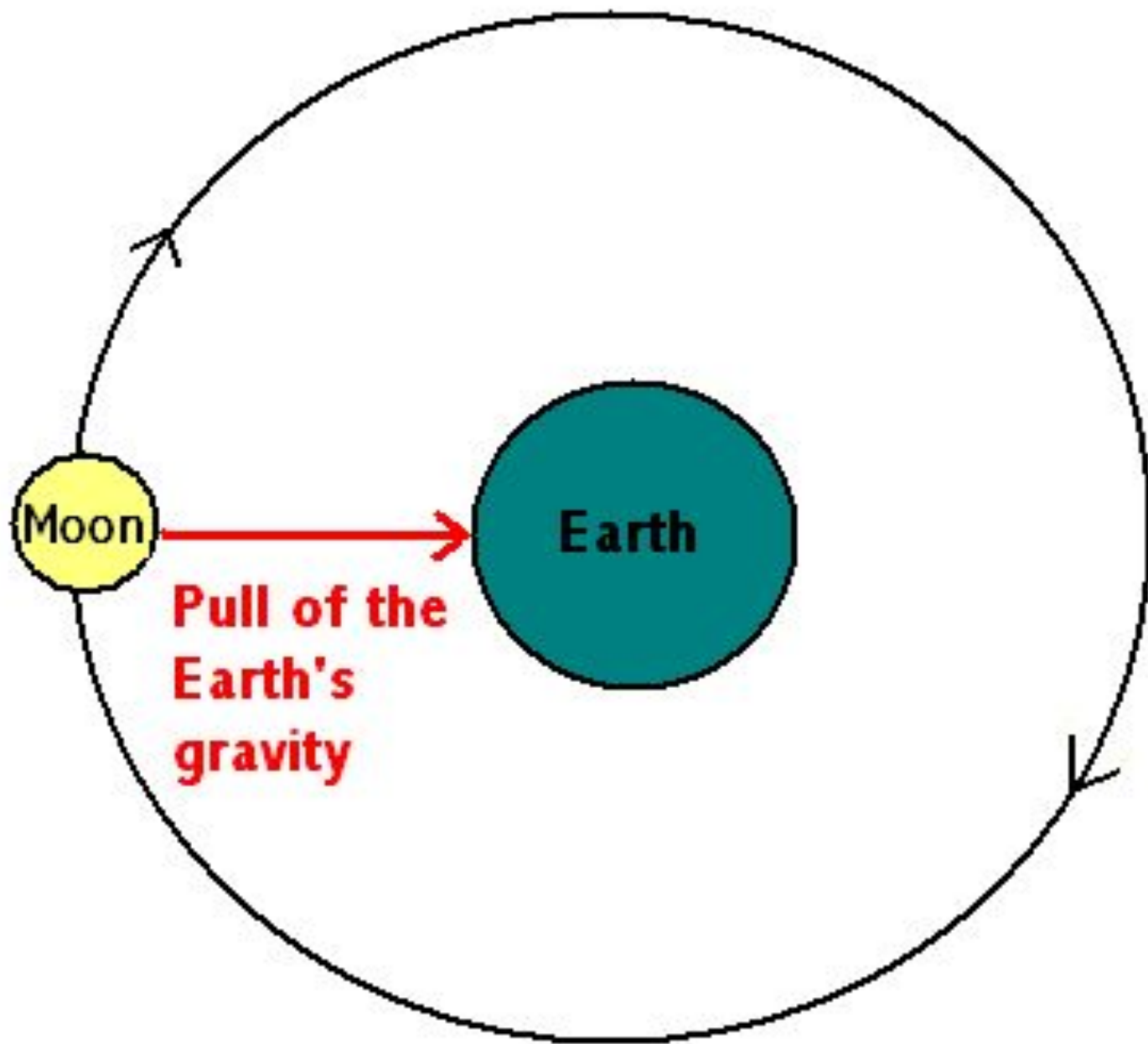


- The path each planet travels around is called its orbit.
 - The planets are kept in their orbits due to the pulling force of the Sun's gravity.
-

What are moons?



- Moons are 'natural satellites'
- Moons orbit around a planet
- The moon stays in its orbit due to the gravitational pull of the planet
- Our moon has a circular orbit
- We see the moon because it reflects light



What else is found in our Solar system?

- **Asteroids**
 - These are minor planets found in their thousands between Mars and Jupiter
 - **Meteorites**
 - These are probably fragments of asteroids that broke up
 - **Comets**
 - These are lumps of 'dirty ice' a few km across that travel in highly elliptical orbits. As they near the Sun they warm up. This causes a tail of dust and cloud.
-

What is a galaxy ?

- A galaxy is made up of billions of stars



- Our galaxy is called the **Milky Way galaxy**, that has a **spiral** shape
- Our Sun is just one of the stars that form the Milky way galaxy.
- The Milky Way is **100 000 light years** across, and the nearest star to Earth (apart from the Sun) is **4.2 light years** away



The Milky Way galaxy



Our solar system is here

What is a light year?

- A light year is **not** a period of time
 - A light year is a **distance**
 - A **light year** is the **distance** that light travels in **one year**
 - As light travels at a speed of **300 000 000 m/s** (or **300 000 km/s**) then if we multiply this by the number of seconds in a year we will see that light will have travelled **9.5×10^{15} m** (9 500 000 000 000 000 m)
 - Our galaxy is 100 000 times this distance across
-

The Universe !

- There are **millions of other galaxies** which are seen further and further away in space
 - Galaxies themselves **are millions of times further apart** than the stars are within a galaxy
 - All these galaxies make up the **Universe** (which includes all the empty space between galaxies)
 - The Universe is perhaps 20 000 million light years across
-

Questions about the solar system for teacher)

1. The smallest planet in the solar system

- a) Mercury
- b) Mars
- c) Pluto
- d) Earth

2. Which planet is closest to the Sun?

- a) Saturn
- b) Jupiter
- c) Mars
- d) Mercury

3. The hottest planet in the solar system

- a) Uranus
- b) Neptune
- c) Venus
- d) Mercury

What do you think ... is there life on other planets?) And when aliens come to us?)))

