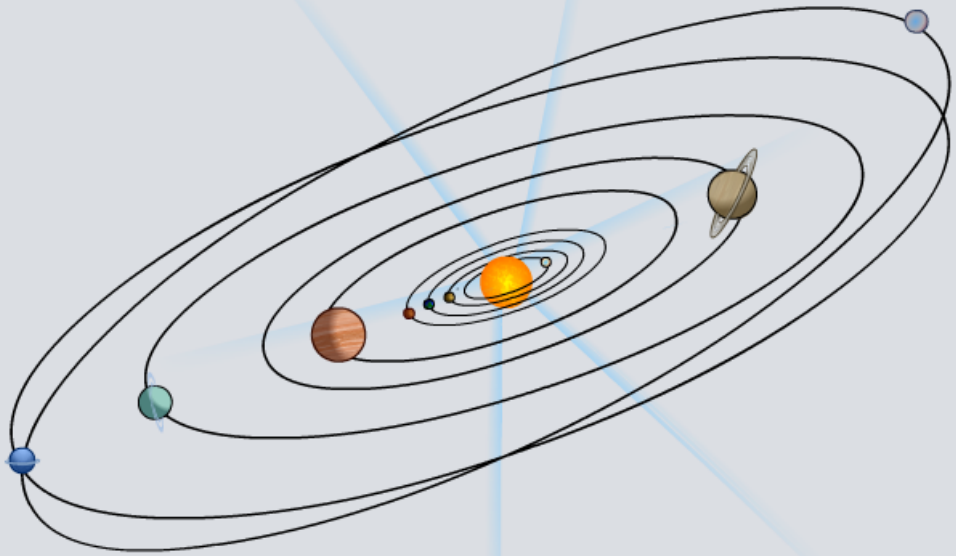
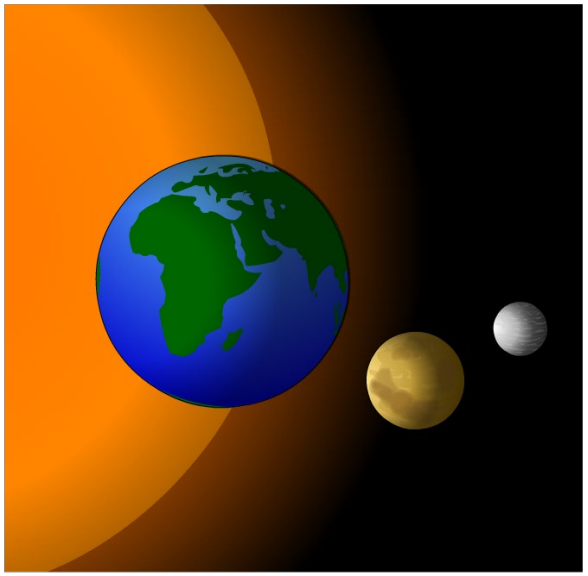
Gravity



Why does the Earth move around the Sun?

What force can be large enough to change the direction of a planet? **gravity**

The size of gravitational attraction depends on the size of an object's mass.



Small everyday objects have such a relatively tiny mass that we do not notice their gravitational attraction.

However, with objects as big as moons, planets and stars, the gravitational attraction is much more noticeable.

So why don't the planets clump together?

Newton’s thought experiment

What is an orbit?

Sir Isaac Newton devised a thought experiment to explain how objects become trapped in orbit by the Earth's gravity.

Click "**play**" to find out more about this thought experiment.

What orbits the Earth?

A **satellite** is an object that orbits another object.

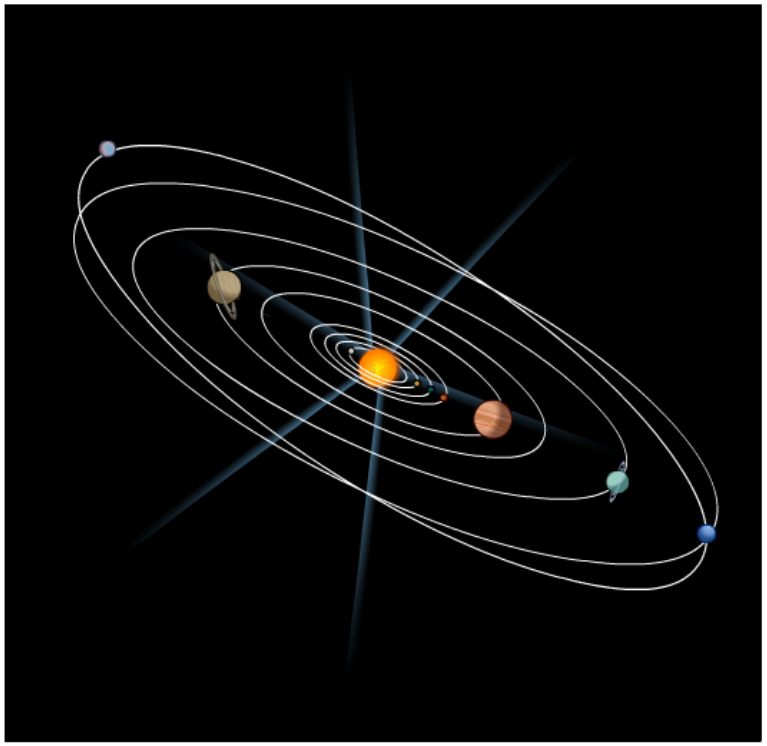
What is the largest satellite to orbit Earth? Clue: it is natural.

The Moon

The Moon rotates on its own axis once every 27.5 days, which is the same time it takes for the Moon to orbit the Earth. This means that from Earth, we always see the same side of the Moon.

Humans have also launched many artificial satellites into Earth's orbit. These are used for communications, imaging and scientific monitoring.

How do planets orbit the Sun?



The planets travel in **elliptical orbits** around the Sun. This is due to the force of gravity.

The pull of the Sun's gravity causes the planets to speed up when they move towards the Sun and slow down when they move away from it.

The changing speeds of the planets as they orbit the Sun make it very difficult for the orbits to form a perfect circle.

All the planets, except Pluto, orbit the Sun in the same plane.