

## Bitesize GCSE Science - Physics

### Space

#### **Astronomer at the Royal Observatory Greenwich Tom Kerss on gravitational forces**

Gravity is a force that we all feel, we can't see but it is one of the most powerful forces in the whole universe particularly when we have all of the mass of the universe summed up, the mass of the stars, the galaxies and so on.

Everything in the universe has gravity towards everything else so you can feel gravity right now, it is pulling you towards the floor of the room that you are in. What is interesting is that unlike the other forces that shape our universe gravity seems to only pull things together. All the other forces can work in two different ways but gravity seems to only pull things together.

Gravity of course is the force that keeps planets in orbit around the Sun so if we didn't have this gravity the planets would simply fly off into space and they would get very cold very quickly if they weren't close to the Sun as they are now.

Gravity is absolutely central to the shape of the solar system today and the fact that it has been so stable for the last four or five billion years.