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Coláiste na Tríonóide, Baile Átha Cliath  
The University of Dublin

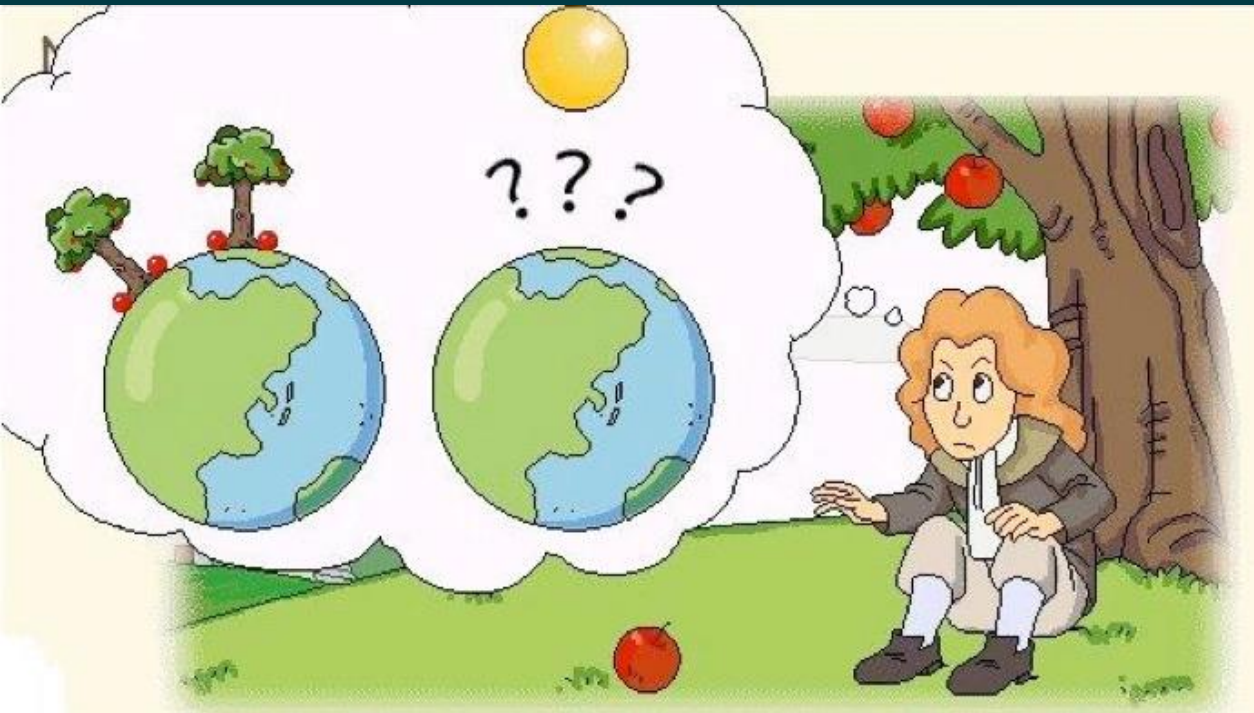


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# Gravity and the Origins of the Universe

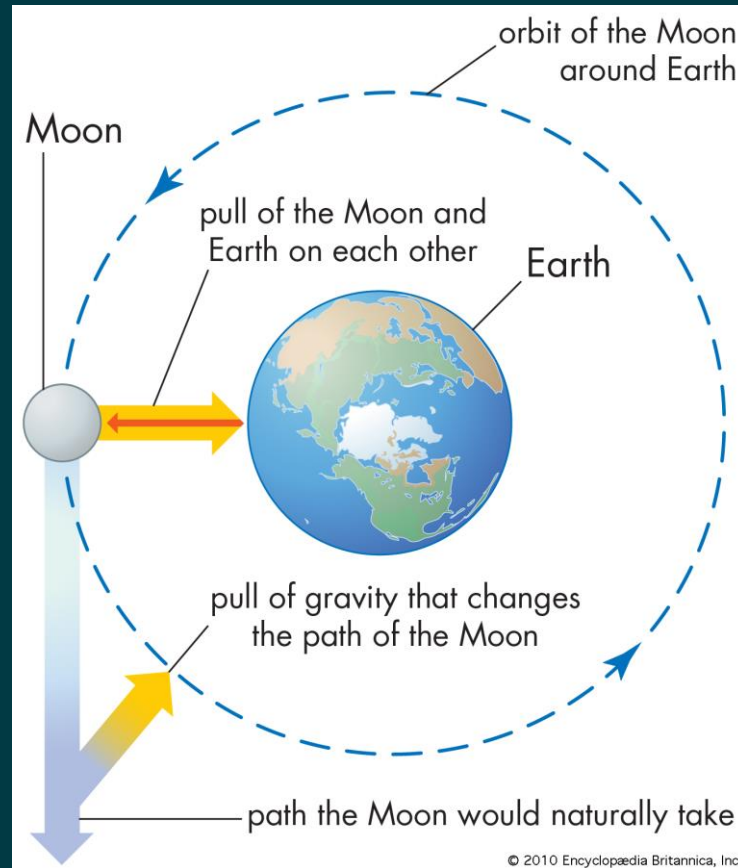


# What is gravity?



Gravity is a force of attraction between all matter.

# What would happen if suddenly gravity was 'turned off'?



[http://phet.colorado.edu/sims/html/gravity-and-orbits/latest/gravity-and-orbits\\_en.html](http://phet.colorado.edu/sims/html/gravity-and-orbits/latest/gravity-and-orbits_en.html)

# What would have happened if there was no gravity at the beginning of the Universe?

If the universe had begun with no gravity the expansion would have been much faster and space would be much bigger.

However, without gravity there would be nothing to hold matter together, space would be a very empty boring place



# Star Recipe

## Ingredients:

- Space
- Cloud of dust & gas
- Gravity

## Time:

millions of years

## Method:

1. Patches of the cloud become more dense, and this increases the force of gravity, causing the cloud to collapse in on itself
2. The collapse has condensed matter and so it is hotter. The collapse is also occurring faster at its centre and so it begins to spin.
3. This continues until the core of the cloud is hot enough to fuse nuclei, creating vast amounts of energy.
4. This energy pushes against gravity and allows the star to become stable

