



Gravity

Hildegard of Bingen (1099-1178)

- > Anticipated the concept of universal gravitation

Galileo Galilei (1564-1642)

- > Developed improved telescopes with greater magnification and used them to revolutionize our understanding of the Universe.
- > Discovered that all objects regardless of mass fall at the same rate when dropped from the same height (if air resistance is neglected).

Isaac Newton (1642-1727)

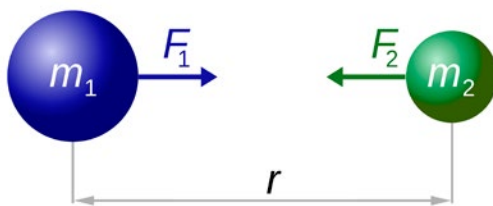
- > Worked out laws of motion and gravity, revolutionizing our understanding of the world.
- > Our understanding of the orbits of planets, moons, and satellites such as the International Space Station is based on Newton's laws.

Newton's Laws

1. An object at rest or an object moving in a straight line at a constant speed stays that way unless a force is applied to it.
2. An object's mass times its acceleration is equal to the applied force ($F=Ma$).
3. For every action, there is an equal and opposite reaction.

Newton's Universal Law of Gravitation

- > The force of gravity between two bodies is directly proportional to the product of their masses and inversely proportional to the square of the distance between them.



$$F_1 = F_2 = G \frac{m_1 \times m_2}{r^2}$$

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