Sir Isaac Newton

Life and Accomplishments

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Table of Contents

The beginning of his life

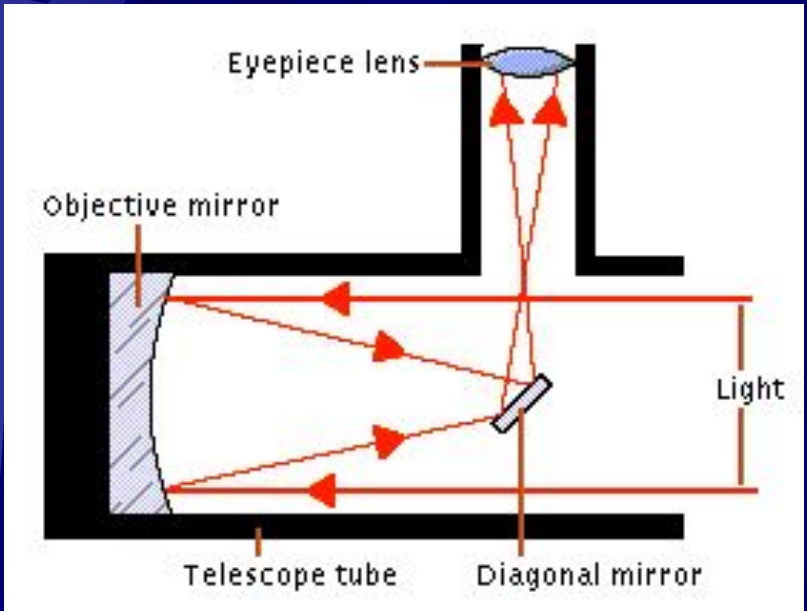
- Born on January 4, 1643
- In Woolsthorpe, Lincolnshire, England
- Where he was raised by his Grandmother

Woolsthorpe Manor: house where Newton grew up

Early life

- Newton received a bachelor's degree at Trinity College, Cambridge in 1665
- The next two years Newton returned home where he came up with most of his discoveries.
- He returned to Trinity College in 1667, where he became a professor of mathematics in 1669.

Reflecting Telescope



- In 1668 Newton made the first reflecting telescope
- Light is collected and refracted from a curved mirror
- Far superior from refracting telescopes because the image did not become blurry

Calculus

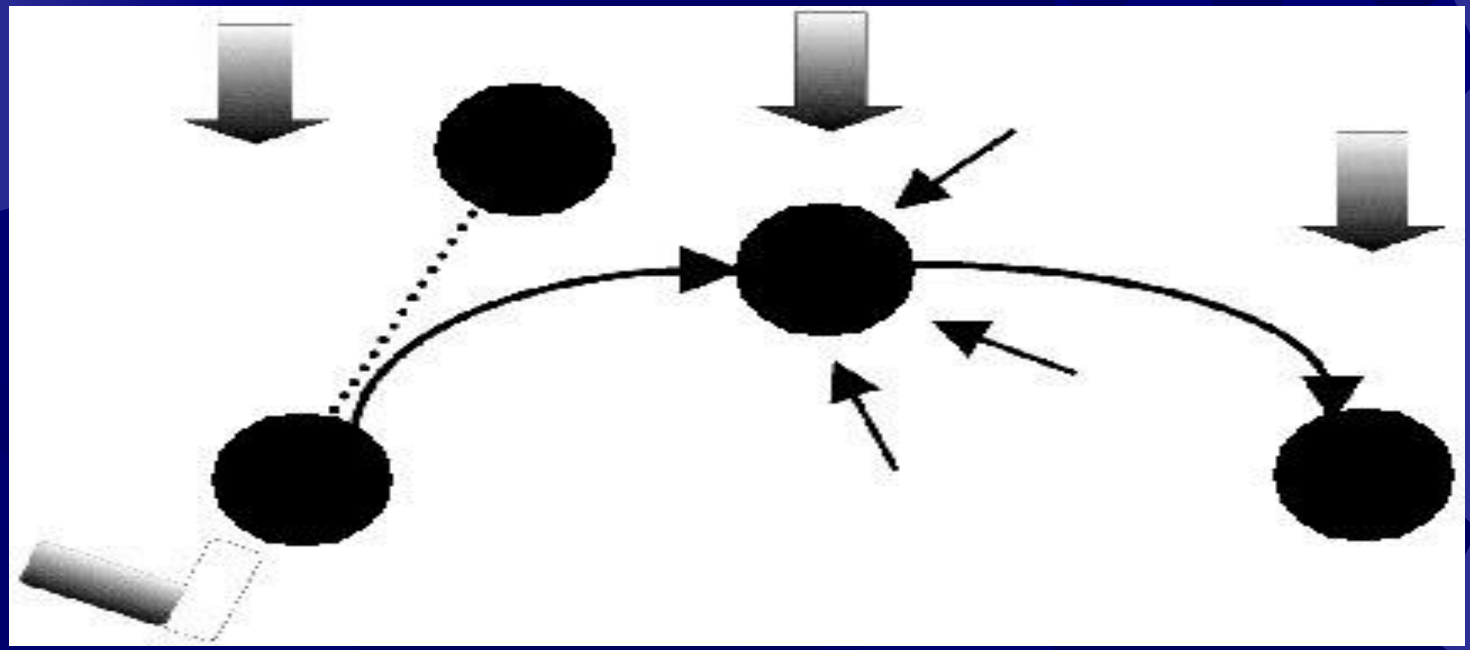
- Newton invented Calculus in 1669, but didn't publish his work until 1704
- Calculus is divided into two parts Differential and Integral Calculus
- Differential Calculus: Deals with the change in rate of objects
- Integral Calculus: Deals with measuring quantities and dividing into smaller ones

Motion and Gravity

- Newton wondered why objects fell to earth while sitting under an apple tree he saw an apple fall in front of him
- Although many believe this story is untrue
- That is when Newton came up with the three laws of motion

First Law of Motion

- A body continues in a state of rest in a straight line if it is not acted upon by forces.

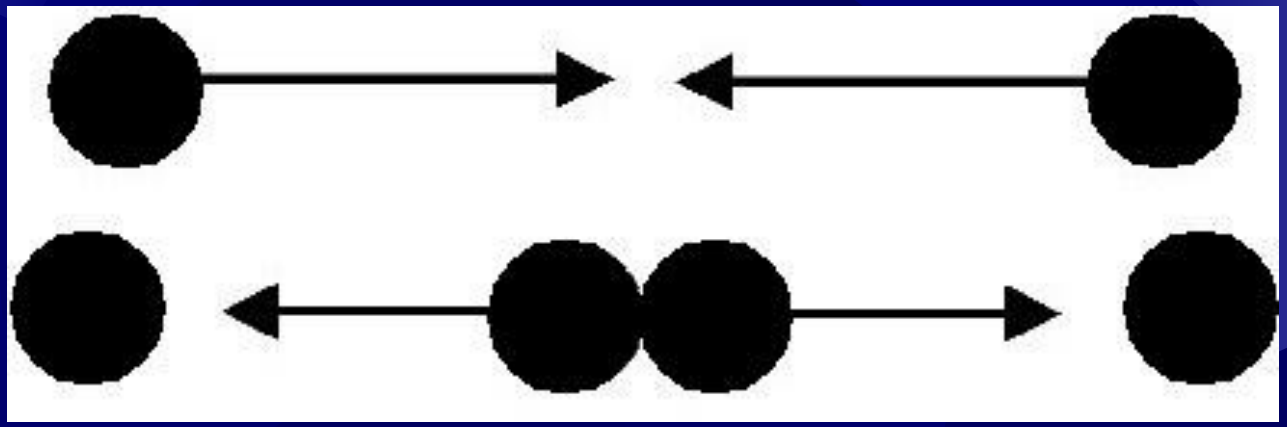


Second Law of Motion

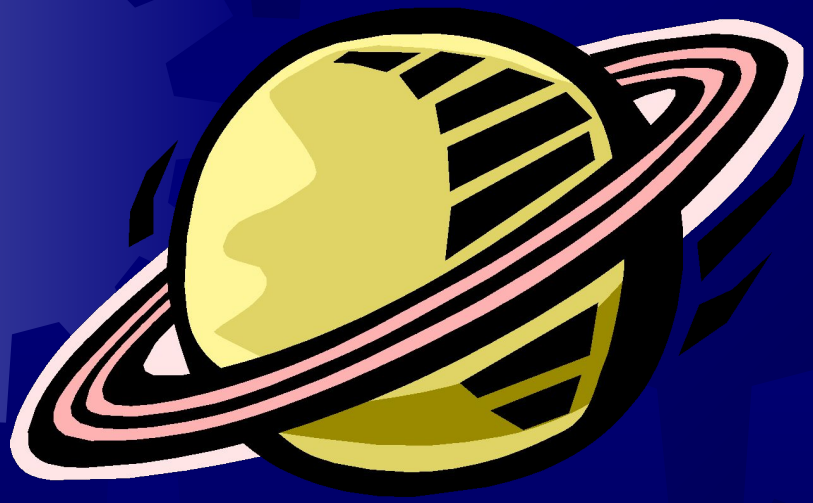
- When a force acts on a body it produces an acceleration, which is proportional to the magnitude of the force

Third Law of Motion

- If body A exerts a force on body B, body B always exerts an equal and opposite force on body A



Force



- Newton believed that when an object goes around another there are two balanced forces.
- Centripetal force: pulls the revolving object towards the pivoting point
- Centrifugal force: pulls the object away from pivoting point

Comets

- Newton showed that comets acted upon by the same forces as the planets
- Proved when Edmund Halley predicted the next time a comet would pass by again

Principia and *Opticks* most popular works

- Newton summarized his discoveries in Philosophiae naturalis principia mathematica (mathematical principles of natural philosophy) (1687)
- It shows his principle of universal gravitation and provided an explanation both of falling bodies on the Earth and of the motions of planets, comets and other bodies of the universe.
- Opticks (1704) presented his discoveries of light and elaborated his theory that light is composed of corpuscles, or particles.

A Great Man

- Isaac Newton died on March 31, 1727 in London, England

References

1. Book
    1. *Isaac Newton (The Last Sorcerer)*, by Michael White
2. Encyclopedia Article
    1. The New Encyclopedia Britannica Volume 8. Micropaedia/Ready Reference pg. 663
3. A source of scientific period
    1. *The Scientists of The Scientific Revolution* pg. 69-87
4. Internet source
    1. Newton, Isaac. The Columbia Encyclopedia, Sixth Edition. 2001 @ www. Bartleby.com