

Ode to Sir Isaac Newton: The Twelve Days of Christmas with Newton
Daphne Gul Dolen, Calculus AB 1993
Keystone School, San Antonio, Texas

On the first day of Christmas, Newton gave to me an apple falling from a tree.¹

On the second day of Christmas, Newton gave to me two refracting prisms² and an apple falling from a tree.

On the third day of Christmas, Newton gave to me Three Laws of Motion³, two refracting prisms and an apple falling from a tree.

On the fourth day of Christmas, Newton gave to me four flying comets⁴, Three Laws of Motion, two refracting prisms and an apple falling from a tree.

On the fifth day of Christmas, Newton gave to me five optic rings⁵, four flying comets, Three Laws of Motion, two refracting prisms and an apple falling from a tree.

On the sixth day of Christmas, Newton gave to me six reflecting telescopes⁶, five optic rings, four flying comets, Three Laws of Motion, two refracting prisms and an apple falling from a tree.

On the seventh day of Christmas, Newton gave to me seven spectrum colors⁷, six reflecting telescopes, five optic rings, four flying comets, Three Laws of Motion, two refracting prisms and an apple falling from a tree.

On the eighth day of Christmas, Newton gave to me eight tides of water⁸, seven spectrum colors, six reflecting telescopes, five optic rings, four flying comets, Three Laws of Motion, two refracting prisms and an apple falling from a tree.

On the ninth day of Christmas, Newton gave to me nine orbiting planets⁹, eight tides of water, seven spectrum colors, six reflecting telescopes, five optic rings, four flying comets, Three Laws of Motion, two refracting prisms and an apple falling from a tree.

On the tenth day of Christmas, Newton gave to me ten feuds with Hooke¹⁰, nine orbiting planets, eight tides of water, seven spectrum colors, six reflecting telescopes, five optic rings, four flying comets, Three Laws of Motion, two refracting prisms and an apple falling from a tree.

On the eleventh day of Christmas, Newton gave to me eleven differential equations¹¹, ten feuds with Hooke, nine orbiting planets, eight tides of water, seven spectrum colors, six reflecting telescopes, five optic rings, four flying comets, Three Laws of Motion, two refracting prisms and an apple falling from a tree.

On the twelfth day of Christmas, Newton gave to me twelve homework problems, eleven differential equations, ten feuds with Hooke, nine orbiting planets, eight tides of water, seven spectrum colors, six reflecting telescopes, five optic rings, four flying comets, Three Laws of Motion, two refracting prisms and an apple falling from a tree.

¹ Newton used the example of an apple falling from a tree to explain his theory of gravitation.

² Newton used two prisms to prove that, by refracting light, white light is actually made up of a spectrum of colors.

³ Newton formulated the Three Laws of Motion, which were the basis of most of his other discoveries.

⁴ Newton, through his studies, traced the path of a comet, which was once feared. Later the comet was named Halley's Comet after one of Newton's friends.

⁵ Newton discovered patterns of optical light, a phenomenon called Newton's rings.

⁶ Using a reflector, Newton invented the first reflector telescope.

⁷ Through his study of light, Newton discovered the spectrum of visible light (the colors of a rainbow).

⁸ Using his theories of gravitation, Newton explained the mechanics of the tides of the shorelines of the earth.

⁹ Newton explained how large objects, like planets, could stay in orbit (his gravitational laws).

¹⁰ During his lifetime, Newton had many petty tiffs and disagreements with Hooke that could have been avoided if Newton had acted in a more mature and professional manner.

¹¹ Newton invented integral calculus which uses derivatives and antiderivatives to find areas of irregular shapes. He called derivatives of dependent variables "fluxions."