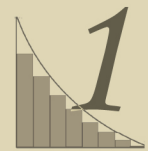


One Man 3 Accomplishments

Isaac Newton was born and raised in England. In school he was a top-ranked student and later attended Trinity College in Cambridge. Here he began to develop a mathematical theory. After he graduated he spent much of his time at home studying and developing theories on calculus, optics, and the law of gravitation.

Throughout his life Isaac Newton made three major accomplishments, which have become well known around the world. Isaac Newton is a mathematician, he is an astronomer, and he discovered theories on optics. With these accomplishments Sir Isaac Newton has become one of the most influential persons in history.



1 Mathematician

Isaac Newton became famous for his solutions to many mathematical problems, such as geometry including drawing tangents to curves and defining areas bounded by curves. He discovered that these two are in fact inverses of each other. Isaac Newton was the inventor of calculus. In 1668 Newton discovered a method of integration by infinite series. His invention of integral calculus and differential calculus has helped other mathematicians move further with the ideas.

With Newton's discoveries in integral calculus and differential calculus he calculated a formula for finding velocity of sound in a gas. This formula and idea is used all around the world and is studied by

almost every high school math and science student. The speed an object moves, such as a toy car rolling down a ramp, can be determined using the velocity formula.



2 Astronomer

Isaac Newton accomplished much with his theories on astronomy. He changed previous understandings of the universe by defining the now well known, three laws of motion. Isaac Newton first came about the theory of gravitation as he watched an apple fall to the ground from an apple tree. The apple falling caused Newton to think about acceleration, velocity, and forces.

The first law is the law of inertia. This law states that every object in a state of uniform motion tends to remain in that state of motion unless an external force is applied to it. The second law states that the relationship between an object's mass m , its acceleration a , and the applied force F is $F=ma$. Acceleration and force are vectors; in this law the direction of the force vector is the same as the direction of the acceleration vector. Newton's third law of motion states, for every action there is an equal and opposite reaction. All three of these laws are incorporated in every math and science curriculum in one form or another.

These laws of motion brought Newton to predict precisely the motion of the stars. Isaac Newton defined universal gravitation. Newton determined that the moon's rotation around the earth is a result of the earth's gravitational force.



3 Optics

Isaac Newton investigated on the refraction of light, and showed that a prism of white light can be broken up into a spectrum of colors. He found that colored light contains the same properties when separated out in a colored beam and shown on various objects. He found that light is composed of particles and moves in sound like waves. With this, Newton determined that the lens of any refracting telescope would allow a dispersion of light into colors using a mirror. Newton built his design of a reflecting telescope, known as a Newtonian telescope. His design involved solving the problem of using a suitable mirror material (highly reflective spectrum metal) and a shaping technique. In 1668, Sir Isaac Newton produced the first reflecting telescope. Isaac Newton developed a color wheel, which summed up his theories of optics.

Newton wrote several books about his findings. These books were reviewed by fellow scientists and mathematicians and expanded on to discover new ideas. With Newton's theories and discoveries he has become the most influential scientist who ever lived. His accomplishments with mathematics, astronomy, and optics have been major contributions to science and humanity. His theories and discoveries have answered many questions about the earth and the universe, which went unanswered before his time. Isaac Newton's accomplishments laid the foundations of modern science.