

NEWTON'S LAWS OF MOTION

Introduction:

Sir Isaac Newton's three laws of motion describe the motion of massive bodies and how they interact. While Newton's laws may seem obvious to us today, more than three centuries ago they were considered revolutionary.

Newton was one of the most influential scientists of all time. His ideas became the basis for modern physics. He built upon ideas put forth from the works of previous scientists including Galileo and Aristotle and was able to prove some ideas that had only been theories in the past. He studied optics, astronomy and math — he invented calculus.

In formulating his three laws, Newton simplified his treatment of massive bodies by considering them to be mathematical points with no size or rotation. This allowed him to ignore factors such as friction, air resistance, temperature, material properties, etc., and concentrate on phenomena that can be described solely in terms of mass, length and time. Consequently, the three laws cannot be used to describe precisely the behavior of large rigid or deformable objects; however, in many cases they provide suitably accurate approximations.



This is a great link; with all the information you could possibly need! [Newton's Laws](#)

Background Research:

1. Define the following terms:
 - a. Force:
 - b. Mass:
 - c. Acceleration:
 - d. Inertia:
 - e. Action/Reaction:
 - f. Balanced Forces:
 - g. Unbalanced Forces:
 - h. Directly Proportionate Variables:
 - i. Inversely Proportionate Variables:
 - j. Friction:
 - i. Static:
 - ii. Rolling:
 - iii. Fluid:
 - iv. Sliding:
2. State each of the following Newtonian laws of physics.
 - a. Newton's 1st Law:
 - b. Newton's 2nd Law:
 - c. Newton's 3rd Law:

Scientific Inquiry:

You are tasked with using the rotating platform to demonstrate each of Newton's Laws. You will accomplish this by making a loom video (maximum of 5 minutes in length). In this video you will do a minimum of 3 different demonstrations in which you display each of Newton's 3 laws in action. You are expected to use all of the definitions (in total) from question 1 to describe each of Newton's laws.