

The Atwood Machine

The Atwood machine is a device which was used by George Atwood to measure gravitational acceleration. This machine uses a pulley system and two unequal masses to test Newton's second law of motion. Newton's second law states that any system's acceleration is directly proportional to the net external force which acts upon the system, and is inversely proportional to the total mass of the system.

$$F_{net} = ma$$

This experiment is also designed to measure the constant acceleration due to the force of gravity (g) acting on the machine.

In this experiment we measured the time (t) required for a system of two masses (m_1 and m_2) to fall a vertical distance (y). The difference between the two masses ($m_2 - m_1$) was varied between 4 and 10 grams, while the sum ($m_1 + m_2$) was kept at a constant 30 grams.

Read more: <http://sciencelay.com/physics/the-atwood-machine-experiment-lab-report/#ixzz17Xgp0nSU>

Find a machine of your choice

<https://www.msu.edu/~brechtjo/physics/atwood/atwood.html>