Mechanical set of solids, with rods

SCN-F001A

Function

Intended for experimental study, physics laboratory and carrying out physics experiments on: Mass, weight and determination of the local g value. A scalar quantity, force, a vector quantity, and the vector that represents it. Measuring mass weights. Building table and graph. Calculation of percentage relative error. The simple machine called a fixed pulley. Identifying the driving force and the resistant force in the use of the fixed pulley. The fixed pulley is a simple machine. The simple machine called a moving pulley. Identifying the driving force and the resistant force in the use of the movable pulley. The movable pulley is a simple machine. The composition and decomposition of concurrent coplanar forces. Recognizing the forces acting at a given point in equilibrium. Modifying one of the components and determining the new resultant at the equilibrium point. Rigid body equilibrium conditions, Varignons theorem. Checking the equilibrium conditions of the rigid body. Hookes law on a helical spring. Measuring forces and length variations they cause in the spring. Building table and graph. Determining the spring constant of a helical spring. Association of helical springs in series. Association of helical springs in parallel. The Laws of the Simple Pendulum. The ideal simple pendulum. Elongation and amplitude in pendulum motion. The period and frequency as a function of the amplitude of the simple pendulum. Varying amplitudes in a simple pendulum, keeping length and pendulum mass constant. Varying pendulum masses and keeping the length of the simple pendulum constant. The law of masses and pendular substances. Varying lengths and keeping constant the pendulum mass of the simple pendulum. The law of pendulum lengths. Energy conservation.

Work and energy in a mass and helical spring system. The energy exchanges that occur in an oscillating mass-spring system. The work done by a force acting on a body causing the body to move. Determining the work done by the force.

Knowledge areas

Physics - Compact Kits

Level

Graduation - High school