



## Inclined plane with multichronometer (Bluetooth), sensors

EQ001BT

### Function

Intended for experimental study, physics laboratory and carrying out physics experiments on: Solid mechanics, movement in one dimension, scalar kinematics, trajectory, distance traveled, initial and final position, displacement, reference, position, movement and trajectory, mobile, trajectory and displacement, difference between displacement and distance covered, Cartesian reference system, scalar quantity, vector quantity, uniform rectilinear motion (MRU), speed, displacements in one dimension, meeting of two pieces of furniture in MRU with opposite directions, on the same trajectory, characteristics of uniformly varied rectilinear motion (MRUV), acceleration, Torricelli equation, dynamics, friction forces, Newton first law of motion, friction force depends on the nature of the surfaces in contact, friction force in relation to the contact area, Leonardo Da Vinci empirical law on friction, coefficient of static friction, Newton first law of motion, kinetic friction force, determination of the coefficients of static friction and sliding kinetic friction, statics, driving force and its equilibrant, in a mobile on the inclined plane, conditions of equilibrium of a material point, force diagram, mechanical advantage of the simple machine inclined plane, conservation of energy, conservation of mechanical energy, rotational dynamics, center of mass, moment of inertia, linear speed and angular, linear and angular velocities of the solid and hollow cylinders, moment of inertia, moments of inertia of the solid and hollow cylinders, kinetic energies of translation and rotation of the cylinders, gravitational potential energy, potential energies of the solid and hollow cylinders, comparing the initial mechanical

energy with the final mechanical energy of the cylinders, conservation of translational and rotational mechanical energy, tables, graphs, trend line, function, etc.

## **Knowledge areas**

Physics

## **Key Experiments**

The movement and the trajectory.

What are the characteristics of the MRU?

The meeting of two pieces of furniture in MRU with opposite directions, on the same path.

The MRUV and its characteristics.

The frictional forces and Newton's first law of motion

The determination of the sliding static and kinetic friction coefficient

The equilibrium of a moving object on an inclined plane

The mechanical advantage of a simple machine, inclined plane

Conservation of mechanical energy, moment of inertia.

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