

calculate the maximum height and compare it with the measured value. The percentage relative error. Vertical launch, maximum height and conservation of mechanical energy, sensor. Measuring the initial velocity of the sphere in a vertical launch. Conservation of mechanical energy. Determination of the maximum height of the sphere (projectile) from the conservation of mechanical energy. Measuring the initial velocity in an oblique launch and determining the maximum height by conservation of mechanical energy. The diameter of the sphere. Measuring the initial velocity of the throw at 45 degrees. Determining the maximum height of the sphere from the conservation of mechanical energy. Conservation of momentum, kinetic energy and coefficient of restitution in an elastic collision. The masses of the spheres. Measuring the velocity of sphere 1 before the collision. Measuring the angle between the positions of sphere 1 and sphere 2, at the points of impact with the ground. Determining the time of fall of the spheres. Determining the horizontal components of the velocity of the spheres, after the collision. The quantities of partial and total movements, before the collision. The quantities of partial and total movements, after the collision. The partial and total kinetic energies, before the elastic collision. The partial and total kinetic energies, after the elastic collision. Determining the coefficient of restitution and classifying the type of collision, etc.

Knowledge areas

Physical

Level

Graduation - High School

Key Experiments

The range on an oblique throw. - 1032.064F1

Oblique launches with different flight times and initial speeds, keeping the angle constant. - 1032.064F2

Maximum height at oblique launch of projectile, sensors. - 1032.064F3

Oblique launch, range as a function of launch angle, sensors. - 1032.064F4

Determination of maximum height in a vertical launch from conservation of mechanical energy. - 1032.064F5A

Vertical launch, maximum height and conservation of mechanical energy, sensor. - 1032.064F5

Measuring the initial velocity in an oblique throw and determining the maximum height by conservation of mechanical energy. - 1032.064F6

Conservation of momentum, kinetic energy and coefficient of restitution in an elastic collision. - 1032.064F7

Physical - Mechanics - Kinematics

Horizontal launch, range, uncertainty and impact velocity. - 1032.064A

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