Reference : NRJCINE

This device makes it possible to quantify the kinetic energy.
A luncher propels a ball that then collides with a block of wood. The greater the kinetic energy of the ball, the more the block of wood will move on the support.
The launcher can be set to 3 different positions and 3 balls of the same volumes but different masses are provided. 9 configurations are thus possible.
A slot is provided to install a digital photogate (BEESPI reference, not supplied) to measure the ball speed upon leaving the launcher.
It will be easy to confirm that the kinetic energy is proportional to the square of the speed and the mass of the ball: $E = 1/2\ mv\ \widehat{}\ 2$
Technical characteristics:

- 3 Ø 25 mm balls supplied : steel, ceramic, plastic

- 3 position launcher: 3 launch speeds

- Sliding block of wood: 15 x 100 x 40 mm

- Total dimensions: 1155 x 80 x 70 mm
  1st experiment:
  By setting the launcher always in the same position, perform the experiment with the 3 different balls and each time record the movement distance of the block of wood. Then plot in a graph the distance measured according to the mass of the ball A line must be obtained.

  2nd experiment (requires the use of a digital photogate, ref. BEESPI):
  Using the same ball but varying the position of the launcher, each time measure the speed of the ball

(using the digital photogate) and the distance travelled by the block of wood. Plot this distance in a graph according to the square of the speed and check that the curve obtained is a straight line