CONSERVATION OF ENERGY IN THE PENDULUM

MED 10.08

Material

Item-no.	Qty.	Description
DS600-00	1	Lab table "NTL", mobile
DS600-10	1	Assembly for lab table "NTL"
DS500-1G	4	Screw clamp, jaw width approx. 50 mm
DS600-6G	1	Board holders, pair, magnetic
DS103-7G	2	Sliding saddle, H=70 mm
DS204-2L	1	Bearing pin with clamp insert
DS093-04	1	Sliding saddle "Sepp", H=40 mm
DS201-10	1	Support rod, round, L=100 mm, D=10 mm
DG200-1S	1	Cord, D=1.7 mm, L=5 m
DM380-6K	1	Ball, D=60 mm, plastics, white, tapped
DS102-3S	1	C-hook, threaded

CONSERVATION OF ENERGY IN THE PENDULUM

MED 10.08

Purpose
To demonstrate the conversion of energy in a pendulum –
without the occurrence of rotational energy and with low frictional heat losses.

Preparation
Fix the table setup with the four screw clamps to the lab table.

Fix the board holder to the rail of the assembly; afterwards you can fix the 70 mm sliding saddle at the upper end of the board holder.

Mount the bearing pin with clamp insert in this sliding saddle; make sure that the bearing pin protrudes about 5 - 10 mm from the clamp insert.

Mount the sliding saddle „Sepp“ on the bottom end of the board holder and insert the 100 mm support rod into this sliding saddle.

Cut off a cord with a length of 90 – 95 cm, make loops at the end of the cord and then hang the cord to the bearing pin.

Screw the C-hook to the plastics ball and hang the hook into the bottom loop of the cord.

CONSERVATION OF ENERGY IN THE PENDULUM

MED 10.08

Experiment 1
Deflect the plastic ball and release it.

Result
No matter what the path of the pendulum ball looks like, it almost reaches the starting height again.

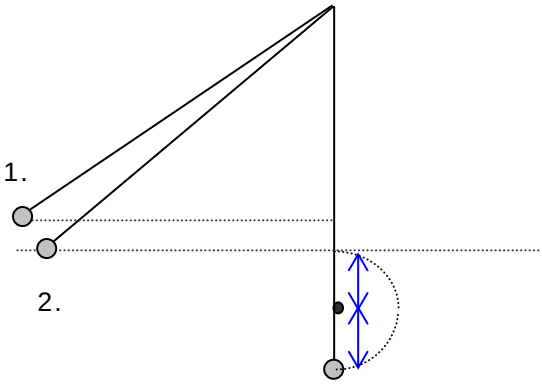
After the conversion into kinetic energy (completely at the lowest point) the conversion back into potential energy takes place (at the reversal point).

CONSERVATION OF ENERGY IN THE PENDULUM

MED 10.08

Experiment 2
Remove the sliding saddle „Sepp“ from the board holder and fix the second 70 mm sliding saddle at the bottom rail of the assembly as shown on the image to the right. Insert the support rod in horizontal position into the hole of the sliding saddle.

Deflect the plastic ball even more than in the 1st experiment and release it.



Result
If the pendulum has not yet reached the initial height at the highest possible point, kinetic energy is still available and the cord can wind up (see 1st sketch).

If the ball reaches exactly the starting height at the highest possible point, it falls down (see 2nd sketch).