

## Newton's 2nd law/ demonstration track

Article no: P2130305



### Principle

The distance-time law, the velocity time law, and the relationship between mass, acceleration and force are determined with the aid of the demonstration track rail for uniformly accelerated motion in a straight line.

### Tasks

Determination of:

1. Distance travelled as a function of time
2. Velocity as a function of time
3. Acceleration as a function of the accelerated mass
4. Acceleration as a function of force.

### Benefits

- Accurate results due to measurements with low friction: cart with sapphire bearings
- Over the entire track length adjustable feet for a very simple alignment of the track even on small tables
- Extremely robust accessories, for example no overloading of carts due to elastic bearing of base plate, prevent unnecessary breakdowns
- Detailed, illustrated step-by-step manual
- Timer 4-4 can be used for almost every experimental requirement: distance-time law for four distances, measurement of speed at four positions, principles of collisions, measurement of the orbiting time of a rotary movement, the direct measurement of the duration of a complete swing of a mechanical pendulum and for short or long-term measurements with two 8-digit displays by connecting each of 2 timers

### Learning objectives

- Velocity
- Acceleration
- Force
- Acceleration of gravity

## Scope of delivery

PHYWE Timer 4-4	13604-99	1
Light barrier, compact	11207-20	2
Slotted weight, blank, 1 g	03916-00	20
Slotted weight, silver bronze, 10 g	02205-03	4
Slotted weight, silver bronze, 50 g	02206-03	3
Starter system for demonstration track	11309-00	1
Magnet w.plug f.starter system	11202-14	1
Tube with plug	11202-05	1
Plasticine, 10 sticks	03935-03	1
Silk thread, l = 200 m	02412-00	1
Weight holder, silver bronze, 1 g	02407-00	1
Shutter plate for low friction cart, width: 100 mm	11308-00	1
Needle with plug	11202-06	1
Demonstration track, aluminium, 1.5 m	11305-00	1
Cart, low friction sapphire bearings	11306-00	1
Pulley for demonstration track	11305-10	1
Holder for pulley	11305-11	1
Weight for low friction cart, 400 g	11306-10	1
Pulley,movable,dia.40mm,w.hook	03970-00	1
End holder for demonstration track	11305-12	1
Holder for light barrier	11307-00	2
Portable Balance, OHAUS CX2200	48921-00	1
Connecting cord, 32 A, 500 mm, red	07363-01	2
Connecting cord, 32 A, 500 mm, blue	07363-04	3
Connecting cord, 32 A, 2000 mm, yellow	07363-02	3