



Material:

Item-no.	Qty.	Description
DS090-3K	1	Claw base "Sepp", 260 x 220 mm
P7240-1G	1	Support rod, round, L=500 mm, D=10 mm
DS400-3K	1	Bosshead cross-pattern, Demo, green
C1010-1H	1	Beaker glass, 1000 ml, tall form, Borosilicate
DM140-2C	1	Bodies of equal mass, set of 4
DG100-1L	1	Vernier calliper, metal
DM725-ND	1	Newtonmeter "inno" 20 N / 2000 g
P3120-5B	1	S-shaped assembly platform

Purpose

Measuring the buoyancy of a test body

Preparation

- the 500 mm support rod is clamped into the claw base
- fix the bosshead cross-pattern on the top of the support rod
- place the Newtonmeter on the S-shaped assembly platform
- the weighing bar (hook points downwards) is clamped to the bosshead cross-pattern
- fill the beaker with water

Experiment

We turn in the Newtonmeter and select the measuring range „N“, afterwards we tare (set to 0)

Initially we measure the weight of force of the test body and note the value in the chart below.

Afterward the test body is completely immersed in the water and its weight of force is read off.



	Aluminum	Iron	Copper	Lead
Weight of force (N) in air				
Weight of force (N) in water				
Difference in weight (N)				
Volume (cm ³)	71.1	25.5	22.6	17.7

Of course we could also determine the dimensions of the test body with a Vernier calliper and calculate its volume afterwards.

Result

The buoyancy of a body when immersed in a liquid does not depend on the weight or material, but only on the volume of the body.