# MEASURING DENSITY OF SOLID BODIES - SAME MASS

**MED 01.08**


***Material:***

| Item-no. | Qty. | Description |
|---|---|---|
| DS090-1K | 1 | Claw base simple, L=200 mm |
| P7240-1C | 1 | Support rod, round, L=250 mm, D=10 mm |
| DS400-3K | 1 | Bosshead cross-pattern, Demo, green |
| DM725-ND | 1 | Newtonmeter |
| P3120-5B | 1 | S-shaped assembly platform |
| DM140-2C | 1 | Bodies of equal mass, set of 4 |
| DG100-1L | 1 | Vernier calliper, metal |

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**Purpose**
Determination of the density of solids from mass and volume (density = mass / volume).

**Preparation**
Insert the 25 cm rod into the claw base; afterwards fix the cross-patterned bosshead to the support rod. Place the Newtonmeter on the S-shaped assembly platform for a better visibility.

The weighing bar of the Newtonmeter should be mounted in the bosshead with the hook facing down.

**Experiment**
Set the measuring range on the Newtonmeter to „kg“ (Kilogram); afterwards turn it on.

Hang one mass body after another on the hook and note the measurement in the 2nd column of the chart below.

Determine the dimensions of the various bodies with the Vernier calliper and calculate the volume. Note the results of your calculations in the 3rd column of the chart.

Now the density is calculated by dividing the mass through the volume and the results are noted in the last column of the chart.

| | Mass (in kg) | Volume (in $cm^3$) | Density |
|---|---|---|---|
| Aluminum | | | |
| Iron | | | |
| Copper | | | |
| Lead | | | |

**Conclusion**
If the same mass is distributed over a larger space it results in a lower density.