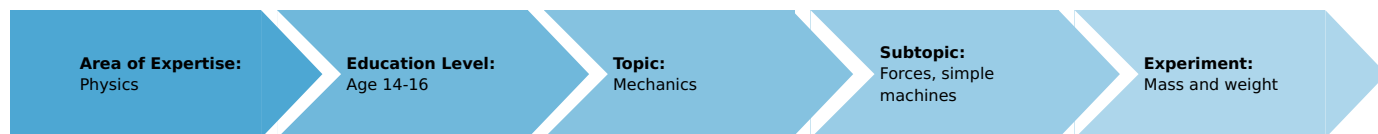


Mass and weight (Item No.: P1251600)

Curricular Relevance



Difficulty



Intermediate

Preparation Time



10 Minutes

Execution Time



10 Minutes

Recommended Group Size



1 Student

Additional Requirements:

Experiment Variations:

Keywords:

Weight force, Dynamometer, Torsion dynamometer

Principle and equipment

Principle

With the aid of a spring dynamometer, demonstrate that the weight of a body is proportional to its mass.

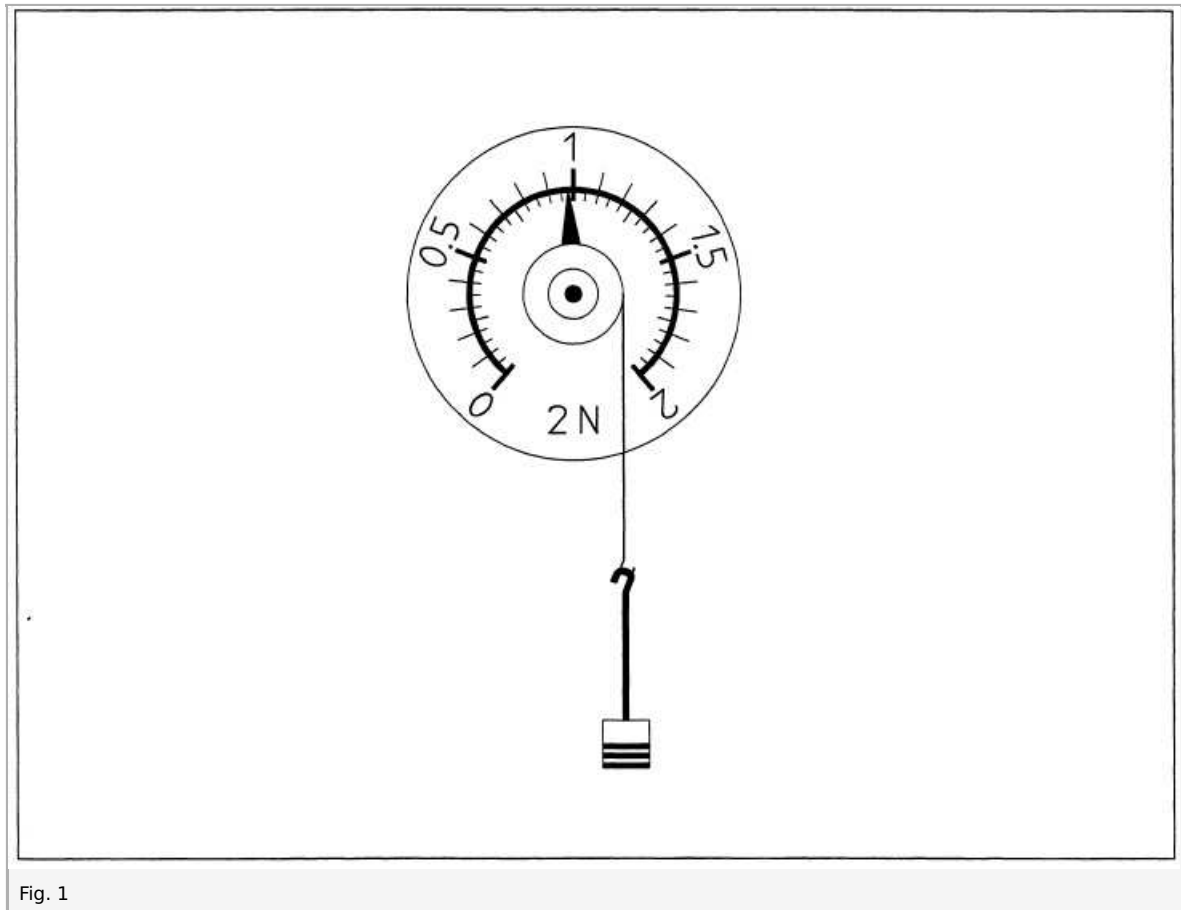
Equipment

Position No.	Material	Order No.	Quantity
1	Demo Physics board with stand	02150-00	1
2	Torsion dynamometer	03069-03	1
3	Weight holder for slotted weights	02204-00	1
4	Slotted weight, black, 10 g	02205-01	2
5	Slotted weight, silver bronze, 10 g	02205-02	2
6	Slotted weight, black, 50 g	02206-01	1
7	Slotted weight, silver bronze, 50 g	02206-02	2

Set-up and procedure

Set-up

- Set-up the experiment according to Fig. 1.
- Set the pointer of the dynamometer to zero.
- Put 4 slotted weights (each 10 g; alternating colours) onto the weight holder and hang it on the dynamometer.



Procedure

- Read the weight F_G and record it in Table 1.
- Successively place the 50 g slotted weights {alternating colours} onto the weight holder; note the respective weight and enter it in Table 1.

Observations and evaluation

Observations

Table 1

m/g	F_G/N	m/kg	$\frac{F/m}{N/kg}$
50	0.49	0.05	9.8
100	0.97	0.10	9.7
150	1.45	0.15	9.7
200	1.95	0.20	9.8

Evaluation