Thread pendulum (Item No.: P1254400)

Curricular Relevance

| Area of Expertise: Physik | Education Level: Klasse 10-13 | Topic: Mechanik | Subtopic: Schwingungen und Wellen | Experiment: Fadenpendel |
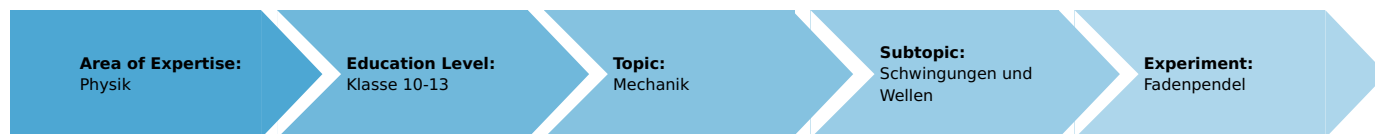
Difficulty	**Preparation Time**	**Execution Time**	**Recommended Group Size**
Easy	10 Minutes	10 Minutes	1 Student

Additional Requirements:

- Stopwatch
- Triangle

Experiment Variations:

Keywords:

Principle and equipment

Principle

Determine the physical quantities on which the oscillation period of a thread pendulum depends.

Equipment

Position No.	Material	Order No.	Quantity
1	Demo Physics board with stand	02150-00	1
2	Clamp on fixing magnet	02151-01	1
3	Hook on fixing magnet	02151-03	1
4	Scale for demonstration board	02153-00	1
5	Weight holder for slotted weights	02204-00	1
6	Slotted weight, black, 50 g	02206-01	1
7	Slotted weight, silver bronze, 50 g	02206-02	1
8	Holding pin	03949-00	1
9	Optical disk, magnet held	08270-09	1
10	Fish line, l. 100m	02090-00	1
11	Marker, black	46402-01	1
Additional material:			
12	Stopwatch		
13	Triangle		

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Set-up and procedure

Set-up

- Place the protractor disk near the top left-hand corner of the demonstration board.
- Secure the holding pin in the clamp, and place the clamp in the centre of the protractor disk.
- Place the hook on fixing magnet to the right of the protractor disk.
- Thread a piece of cord (fish line) which is approximately 90 cm long through the hole in the holding pin (Fig. 2).
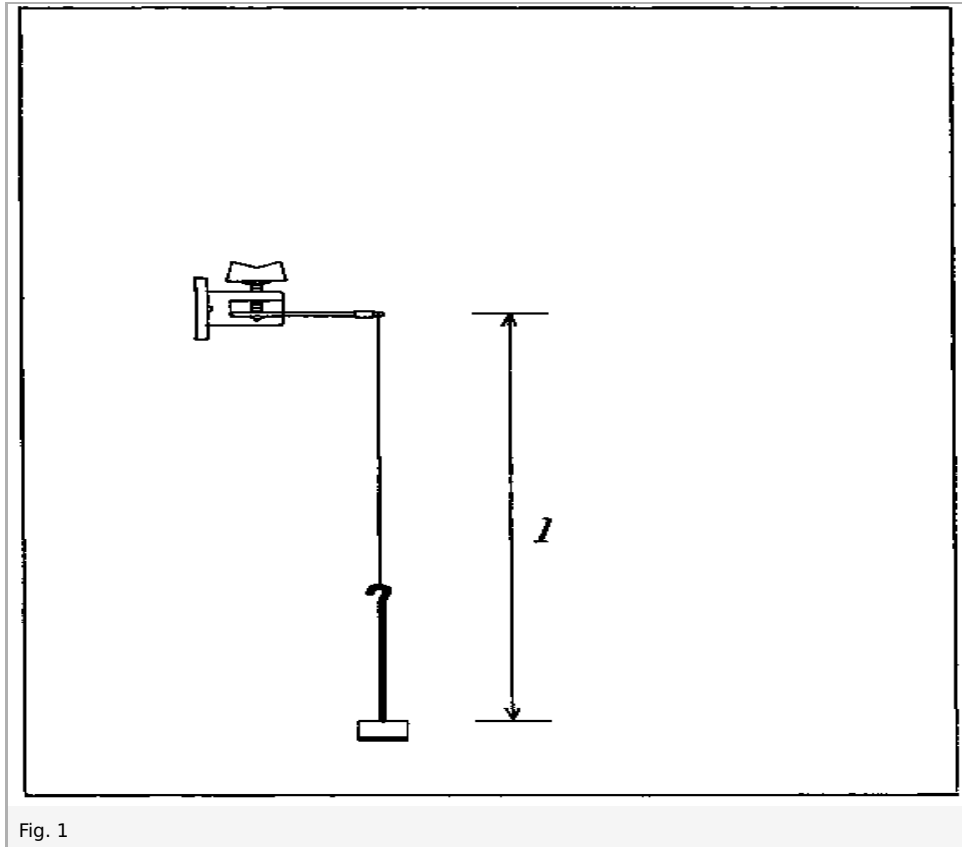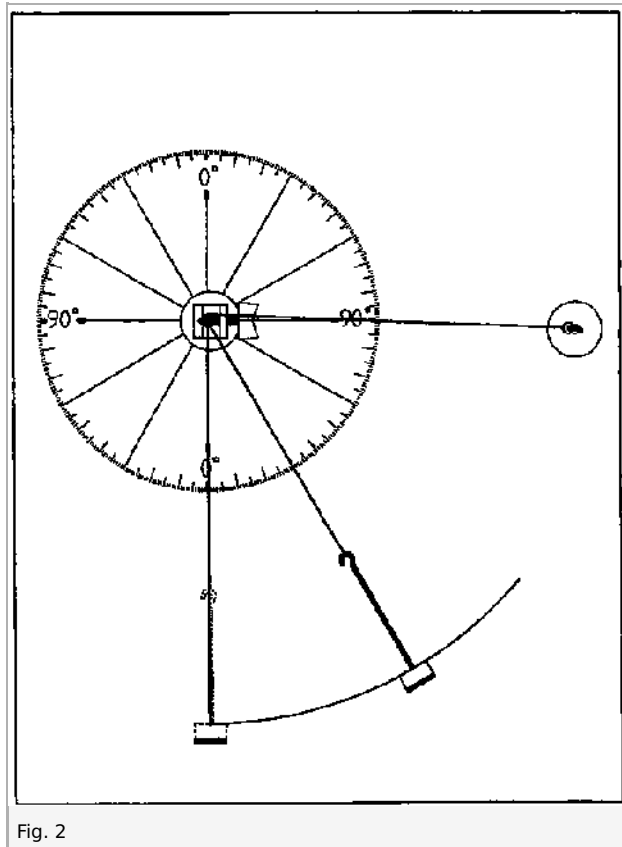

Fig. 1

- Tie loops in the ends of the cord and complete the experimental set-up according to Fig. 1. To begin with, the weight holder is loaded with a 50 g slotted weight.
- Move the hook on fixing magnet until the pendulum length I is, e.g., 50 cm (Fig. 2). (The centre of gravity of the pendulum bob is approximately at the lever of the upper edge of the 50-g slotted weight.)
  Note: In order to be able to position the centre of gravity of the pendulum at an exact distance I from the pivot point without large parallax errors, use both the scale and a triangle.

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Fig. 2

- Draw a vertical line downward from the pivot point of the pendulum, and mark the position of the pendulum's centre of gravity on it (Fig. 1).

Procedure

Observation and evaluation

Observation

Evaluation