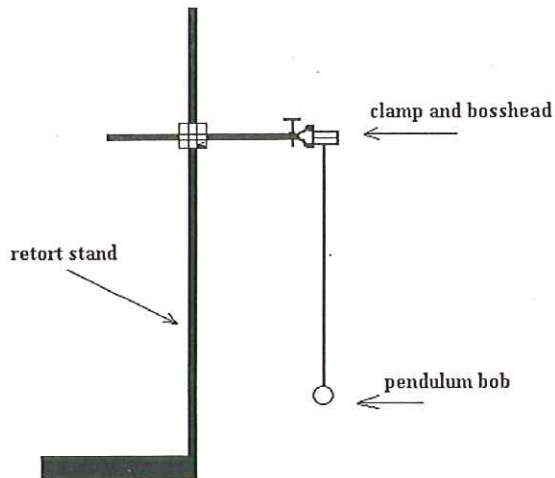


To determine the acceleration of free fall using a simple pendulum.



Additional equipment. metre rule and a timer

- 1 Set up the apparatus as shown in the diagram.
- 2 Use the metre rule to set the length of the pendulum at approximately 100 cm.
- 3 Measure the time for 20 oscillations of the pendulum.
- 4 Repeat stage 3.
- 5 Enter the times in a **prepared table** and calculate the **period T** .
- 6 Reduce the length of the pendulum by **about 10 cm** and repeat stages 3, 4 and 5.
- 7 Calculate values for (T^2) and enter the values in the table.
- 8 Plot a graph of (l) on the x-axis against (T^2) on the y-axis.
- 9 Use the graph to determine the value of the acceleration due to gravity.
- 10 Write a short report.