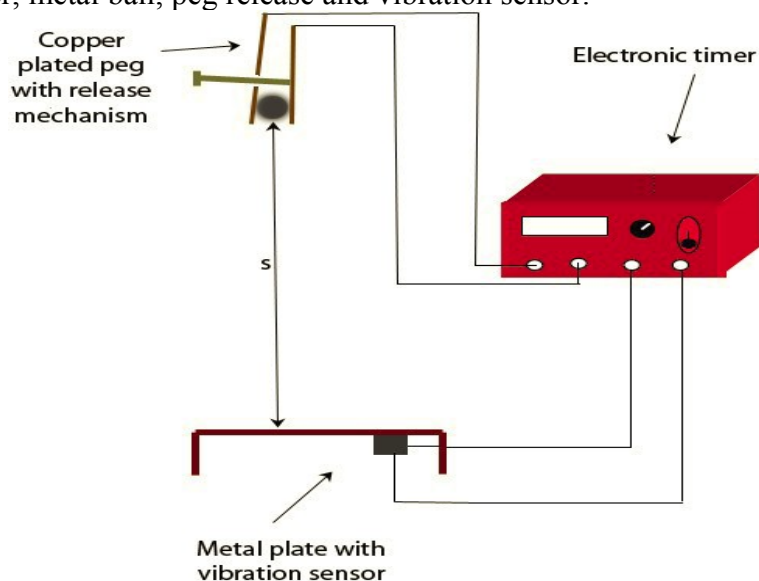


# MEASUREMENT OF $g$

## Apparatus

Millisecond timer, metal ball, peg release and vibration sensor.



## Procedure

1. Set up the apparatus. The millisecond timer starts when the ball is released and stops when the ball hits the metal plate.
2. Measure the height  $h$  as shown, using a metre stick.
3. Release the ball and record the time  $t$  from the millisecond timer.
4. Repeat three times for this height  $h$  and take the smallest time as the correct value for  $t$ .
5. Repeat for different values of  $h$ .
6. Calculate the values for  $g$  using the equation  $h = \frac{1}{2}gt^2$ . Obtain an average value for  $g$ . Preferably, draw a graph of  $h$  against  $t^2$  and use the slope to find the value of  $g$ .

## Results

$h/\text{m}$	$t_1/\text{s}$	$t_2/\text{s}$	$t_3/\text{s}$	$t/\text{s}$	$g/\text{m s}^{-2}$

## Notes

Place a piece of paper between the ball bearing and the electromagnet to ensure a quick release.