Research method:

metre ruler

stand

steel ball

clamps

mechanical pad

timer scale

scrunched up lab coat

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Reference: <https://filestore.aqa.org.uk/resources/physics/AQA-7407-7408-SUG-P3.PDF> (page 2)

Method:

1. Set up apparatus as shown above.
2. Set the initial height at 150mm by loosening the knob and moving the ball and clamps up.
3. Read the height at eye level to reduce the chance of parallax error. Record the height on a table.
4. Turn on timer scale and switch it on.
5. Hold the clamp clips to release the ball.
6. When the ball hits the mechanical pad, record the reading on the timer scale on a table.
7. If the timer scale has not stopped, disregard the current reading and retake reading for current height.
8. Reset the mechanical pad by moving the pad up slightly.
9. Now increase the height by 50mm and repeat steps 3-8.
10. Continue until you have a minimum of 7 readings.
11. Now repeat the experiment 2 more times (for a total of 3 readings for each height).
12. Calculate the mean time for each height and record on table.
13. Calculate the time2 for each height and record on table.
14. Plot a graph of height (y-axis) against time2 (x-axis)
15. Draw a line of best fit

Calculating g:

Using the line of best fit work out the gradient of the graph. When doing so, make sure to convert the height to metres.