

# Higher Assignment Guide Sheet A: 'g'

H



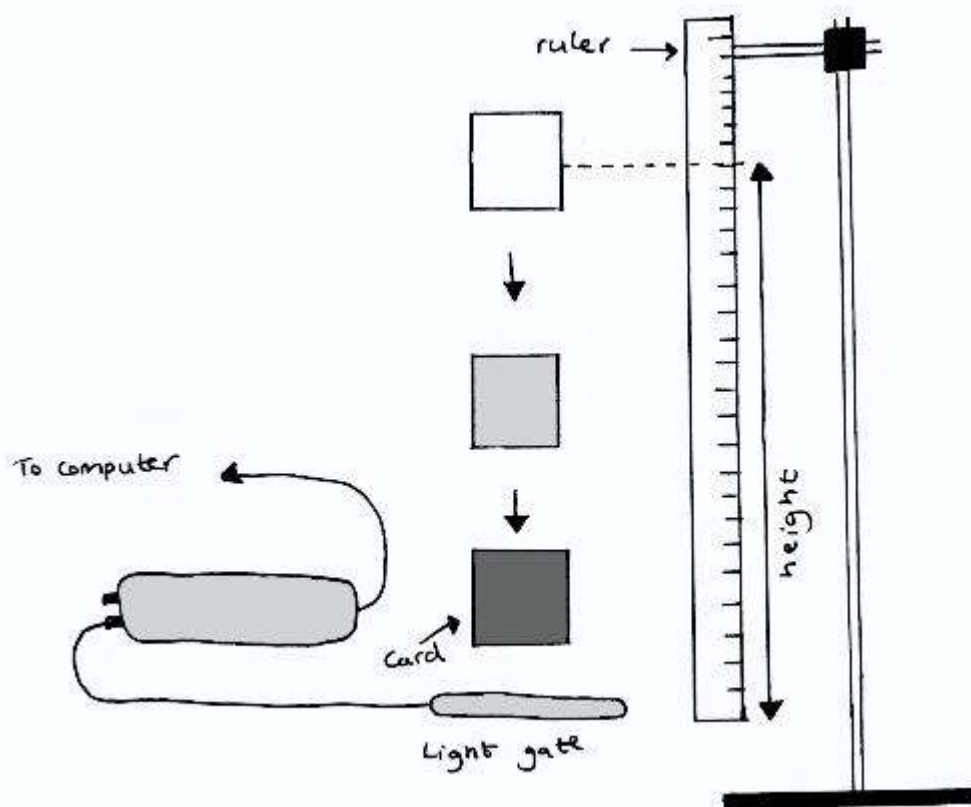
## 'g'

The acceleration of an object allowed to fall under the force of gravity is found by dropping a card vertically through a light gate. The emphasis of this datalogging experiment is on investigating the relationship between the velocity of the card and the distance it has fallen from rest.

## Apparatus

Light gate, interface and computer, Weighted card, Clamp and stand, metre stick

## Instructions:



- Measure the card thickness dropping through the light gate.
- Hold the card above the light gate and next to the ruler so that its height above the gate may be measured carefully.
- Release the card so that it cuts through the light beam; a velocity measurement should appear in the table on the screen.
- Enter the height value in the height column of the table in the computer program.
- Change the starting height and repeat the procedure.
- Present your results.

## **Risk Assessment**

- Be sure masses cannot land on feet or shatter and cause bits to become projectiles which could go into eyes or skin.
- Placing a buffer at the end of the drop so not to damage equipment.
- Do an electrical safety check by observing all the wires.
- Make sure the vehicle cannot become a trip hazard or land on feet, toes etc.
- Be observant to those around you.
- Do not block exits with the apparatus.

## Research

1. [http://tap.iop.org/mechanics/kinematics/206/page\\_46322.html](http://tap.iop.org/mechanics/kinematics/206/page_46322.html)
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3. <http://practicalphysics.org/investigating-motion-sloping-surface.html>
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