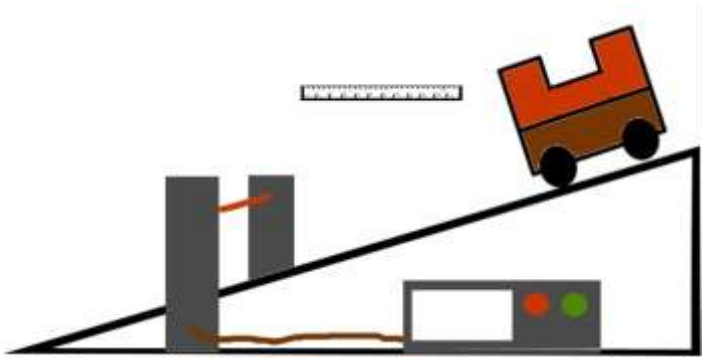
National 5 Assignment
ACCELERATION: Guide Sheet A

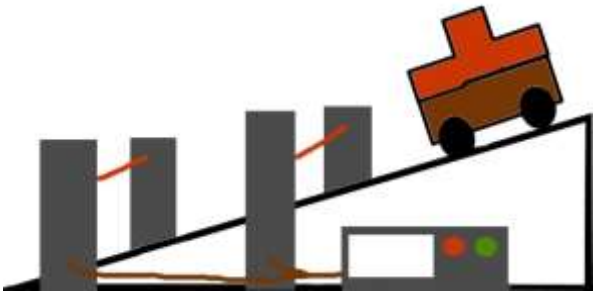
Nat 5

Variation of angle of slope with acceleration.

Apparatus
Runway, light gate(s), interface and computer, mask (single or double), rule, protractor, or metre stick

Instructions:





- Organise the light gates and interface to measure the acceleration of the vehicle as the vehicle passes through the light gate. This can be using one light gate and a double mark or two light gates and a single mask.
- Set the runway up at an angle.
- Measure the angle of the slope.
- Place the light gate so that the mask cuts the beam as the vehicle passes.
- Release the vehicle and measure the acceleration as it passes through the light gate.
- Change the angle of the slope.
- Present your results.

Risk Assessment
- Masses may be heavy so care must be taken to not drop them.
- Placing a buffer at the end of the ramp or something soft for the trolley to land in is suggested 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

2. http://practicalphysics.org/investigating-motion-sloping-surface.html

3. https://www.bbc.co.uk/education/guides/zgbggk7/revision/7

4. https://learning.hccs.edu/faculty/john.barry/physics-manuals/Physics-I-Lab-Manual.pdf

5. http://tap.iop.org/mechanics/wep/216/page_46406.html

6. http://www.effectsmeister.com/physics/UWC_physics_CD/Internal%20Assessment%20-%20guidance/files/pdf/investigation06_annotated_en.pdf

7. http://www.schoolphysics.co.uk/age16-19/Mechanics/Dynamics/text/Motion_on_an_inclined_plane/index.html

8. http://www.dummies.com/education/science/physics/how-gravity-affects-the-acceleration-of-an-object-on-an-inclined-plane/

9. https://www.thinkib.net/physics/page/10715/angle-of-slope

10. http://teacher.pas.rochester.edu/PHY141/Laboratory/Lab01/Lab01B_InclinedPlane.pdf

11. https://www.thinkib.net/physics/page/17305/angle-of-slope

12. http://www.instantspeedtraining.com/increase-acceleration-speed.html

13. https://www.inds.co.uk/education/aqa-gcse/gcse-physics-required-practical-activity-acceleration/

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