

Motion on an inclined plane: Technical Notes

Equipment and materials

- Blu-tack
- Stopwatch (or phone timer)
- Spirit level app
- Dynamics cart
- Dynamic plane (MDF board) x 2
- Brick
- Pen or marker
- Sticky note
- Camera with slow-motion (*i-Phone*)

Method

- 1) Mark both dynamics planes every 20 cm
- 2) Attach a sticky note to the dynamics cart and draw a line thick enough to be seen on phone camera.
- 3) Blu-tack the stopwatch on top on the dynamics cart.
- 4) Place the two dynamics planes a row touching and use a brick to elevate one creating a ramp.
- 5) Using the spirit-level app collect the angle of elevation of the plane.
- 6) Place cart at the top of the ramp and release it without pushing it whilst recording it with the slow-motion camera.
- 7) Watch the footage and record the time each time the line marked on the cart passes the 20 cm interval.
- 8) Move the brick to increase the elevation of the ramp and repeat steps 5-7.
- 9) Put data into an Excel spreadsheet to graph time versus distance and velocity versus time.



Risk Management

The only serious risk in this experiment is that of a cart or other object falling or rolling off the ramp and hitting someone.

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