

Unit A – Kinematics – Lab Investigation – Uniformly Accelerated Motion

Purposes:

- (A) You will participate in a series of experiments that will produce data which reinforce the concept of UNIFORMLY ACCELERATED MOTION.
- (B) You will analyze the data to produce the appropriate DT and VT graphs
- (C) You will analyze the resultant graphs to reinforce the mathematical concepts associated with uniformly accelerated motion

Materials & Method:

I have set up a series of 3 lab stations. At each station, you will find an experimental procedure outlining how to perform your experiment in order to gather your data, as well as an explanation as to how to analyze your data. You will then perform your experiment, record your data and obtain a copy of your required graphs. You will then analyze your data as directed and then present your results & conclusions. You will finish by analyzing the experiment by citing potential error sources and how to correct them.

STATION 0

Define uniformly accelerated motion:

STATION A

You will use a motion detector and demonstrate uniformly accelerated motion, by walking in front of the motion detector in a manner of your choosing AS LONG AS THE MOTION DEMONSTRATES uniformly accelerated motion.

Data to record and collect:

- (A) Obtain a copy of the DT, VT, AT graphs from the computer

Analysis:

- (A) Explain how a DT graph shows uniform acceleration
- (B) Explain how a VT graph shows uniform acceleration
- (C) Explain how an AT graph shows uniform acceleration

STATION B

Perform the Gravity Lab.

STATION C

Perform Experiment #3 - Modern Galileo Experiment.

STATION D – “A” Level Opportunity

Suggest improvements upon the Gravity Lab (in terms of timing). Write a procedure and carry it out. Analyze your results as before (in the Gravity Lab)

ASSESSMENT:

I will be writing an assessment rubric/scoring guide that will direct the writing of your report.