AP Physics 1 Kinematics Project

## Objective: Students will find, record, and explain a 1D and 2D motion scenario.

# Project must contain:

* A video of 1D and 2D motion as encountered in your life.
* A brief paragraph explaining both motions (the object was launched with a +Viy, followed a parabolic trajectory, landed, etc)
* Numerical information & ALL ACCOMPANYING MATHEMATICAL WORK for **BOTH** of the motion scenario that includes:
  + The distance covered
  + The initial velocity (if velocity is changing)
  + The final velocity (if velocity is changing)
  + The acceleration
  + The time elapsed
  + All of these should be calculated for both X and Y (for the 2D scenario)
    - IF YOU DO NOT KNOW/CANNOT MEASURE ALL THE VALUES IN YOUR VIDEO, YOU MAY MAKE AN EDUCATED GUESS AND BASE YOUR CALCULATIONS OFF OF THAT.
* The student will have to identify 2-3 of these values in the scenario (depending on the type of motion occurring) and then solve for the remaining values.

# Notes:

* All the requirements can be presented through any media the student deems most accessible to them *provided all information required is presented* ***neatly***
* *IF YOU NEED A CAMERA, SEE ME ASAP. CAMERA PHONES/IPODS ARE DEFINITELY ACCEPTABLE.*

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| --- | --- | --- | --- | --- | --- |
| Category | 0-2 | 3-5 | 6-8 | 9-10 | Points Earned |
| Story | Explanation paragraph has one sentence or is missing entirely | Explanation paragraph has at least two sentences, but little effort has been put into establishing the scenario | Scenario has 3+ points, but may be hard to follow. Reader understands most of what they are viewing in the video. Both motions (1D and 2D) are explained | Scenario completely details what happened in 1D and 2D videos. Reader has no trouble understanding exactly what has happened. |  |
| Video | Video is missing | Video exists, but does not detail the 1D and 2D motion or one is missing | Video shows 1D and 2D motion but is hard to view/understand | Video shows 1D and 2D motion, viewer has no problem understanding what they are observing. |  |
| 1D Mathematics | Mathematics for the 1D scenario are missing | Mathematics for the 1D scenario exist but are not accurate/2+ variable are unidentified | Mathematics for the 1D motion exist but at least 1 variable is unidentified | All variables for the 1D motion scenario are detailed |  |
| 2D Mathematics | Mathematics for the 2D scenario are missing | Mathematics for the 2D scenario exist but are not accurate/2+ variable are unidentified | Mathematics for the 2D motion exist but at least 1 variable is unidentified | All variables for the 2D motion scenario are detailed |  |
| Presentation | Parts missing; zero effort into making the project easy and pleasant to view. | Parts may be missing, but existing project is easy to view. Creativity is low. | Project is complete, but creativity is minimal | Project is complete, creativity is high. |  |

Total Score: \_\_\_\_\_\_\_\_\_\_\_