

## **LAB: Freefall with Air Drag**

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**Background:** Throughout AP Physics 1 we spent lots of time studying projectile motion and falling objects. The phrase “ignore air drag” has been used time and time again, but no longer! For this lab, you will be creating a simulation for a falling object that **takes into account the effects of air drag**. Then you will use your simulation to conduct a controlled investigation to answer a scientific question.

**Drag Force:** Take another look at the equation for [drag force](#). You will need to use VPython to create a simulation of an object falling under the influence of drag force.

Note: Assume that the falling object is close enough to the Earth’s surface to experience uniform gravitational acceleration.

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**Experimental Objective:** Use a simulation of your own creation to conduct a controlled investigation of your choice. It is up to you to select independent and dependent variables (Get them checked by me before proceeding with data collection). Also, make sure to clearly state your objective in your writeup.

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**Methods:** You must create your own methodology for this experiment. Make sure to include a printout of your code as well as a description of how your code was utilized to gather data relevant to your chosen objective. Ensure that your methods are written in a manner such that a peer could replicate your work.

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### **Graphs and Evidence-Based Claims:**

- Include a data table and graph generated in Logger Pro that is relevant to your objective.
- Make a logical claim regarding your objective that is supported by evidence gathered from your simulation.