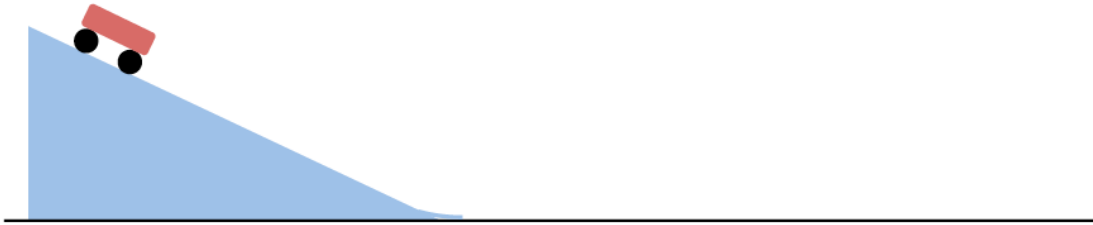


AP Physics 1: Kinematics Experimental Design

Please type or neatly handwrite on a separate piece of paper your response to the experimental design prompt below.

A toy car with essentially frictionless wheels is to be released at the top of an inclined plane such that it will accelerate down the ramp until it reaches the bottom, after which it will continue to roll along the floor.



You have been given the assignment of developing an experimental procedure and data tables that will allow you to measure the car's acceleration on the ramp and its velocity on the floor.

- A. What materials commonly found in a science lab or classroom would you need to conduct this experiment? Explain what you would use each piece of equipment for. (Note that you do not have access to computers or computer-based measuring devices such as motion detectors, smart pulleys, or other probeware.)
- B. What experimental procedure would you use to measure the car's acceleration down the ramp, and velocity along the floor? Describe your procedures as a series of ordered steps, use the diagram above to identify what measurements you would make, and identify which equipment from part (a) you would use in your data collection.
- C. Create appropriate data table(s) with clearly-labeled headers that you would use to record the data from your experiment.
- D. Clearly describe how you will analyze the data you have collected for each part of the experiment (ramp and horizontal surface).