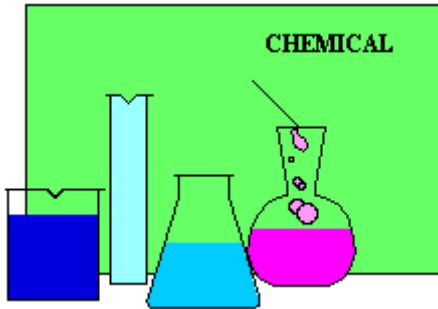


# SAMPLE LAB

## LAB # 0



Barry Bulldog (even)

Period 2

Feb. 30, 2222

**DATA TABLE:**

	<b>Distance Traveled</b>	<b>Time elapsed</b>
<b>Trial One</b>	<b>2.0 m</b>	<b>5.0 sec</b>
<b>Trial Two</b>	<b>2.0 m</b>	<b>5.1 sec</b>
<b>Trial Three</b>	<b>2.0 m</b>	<b>4.8 sec</b>

**OBSERVATIONS:** The marble was accelerated off a ramp made by taping a ruler to a stack of two books and to the tabletop. During each trial a stop watch was used to time the marble once it reached the bottom of the ramp until the marble traveled to the tape marker placed 2.0 meters from the books. The marble used was transparent colorless sphere made out of glass.

## **CALCULATIONS**

### **1. Average Time**

Equation:  $\text{Average Time} = \text{time trial 1} + \text{time trial 2} + \text{time trial 3} / 3 \text{ trials}$

Substitute:  $\text{Average Time} = 5.0 \text{ sec} + 5.1 \text{ sec} + 4.8 \text{ sec} / 3$

Solve:  $\text{Average Time} = 5.0 \text{ seconds}$

### **2. Speed:**

Equation:  $\text{speed} = \text{distance} / \text{time}$

Substitute:  $\text{speed} = 2.0 \text{ meters} / 5.0 \text{ sec}$

Solve:  $\text{speed} = 0.40 \text{ meters/sec}$

### **3. Percent Error:**

Equation:  $\% \text{ Error} = \text{True Value} - \text{Experimental Value} / \text{True Value} \times 100$

Substitute:  $\% \text{ Error} = 2.0 - 2.1 / 2.0 \times 100$

Solve:  $-5.0\%$

**NOTE: never use \* for a multiplication sign....only X**

**Also Note: Any graph required must be hand drawn on graph paper.**

## TABLE OF RESULTS

Average Time	Speed	% Error
5.0 sec	0.40 m/sec	-5.0%

## DISCUSSION:

We were lost at first. We didn't understand how to get the board to the right angle for the lab. So we got off to a slow start, but you showed us how and we were okay after that. Sources of error included: **1.** Time delays that occurred when I started and the stopped the stopwatch. My partner handled the marble and I handled the stopwatch and although we concentrated and worked hard, I am sure reaction time caused error in our lab. Suggest improvement ; Maybe this lab would be more accurate with timing devices that use a beam of light to stop the timer once the marble tripped it. **2.** The ruler surface was rough. We noticed instead of rolling smoothly down the ramp the marble jumped and skipped losing contact with the surface of the ruler. This could have had an effect on the speed of the marble. Suggest improvement : Use smoother rulers, with a deeper polished groove the marble can follow. **3.** The tabletop had minor flaws and particles on it. My partner and I noticed that the marble did not follow the same path on each of the trials. Slight flaws and particles in the tabletop changed the path of the marble . Suggest improvement: Clean the surface of the table first to remove any particles that could deflect the path of the marble.

## CONCLUSION:

I learned that the velocity of an object can be determined if you know the object's distance traveled and time it takes to cover that distance.

## QUESTIONS

NONE: Thank you!! Note if questions are included make sure you answer them in a complete sentence or, if it involves a problem to solve, make sure that you show your work .

**Final note: make sure that you attach your original flow chart and data table to your finished lab write-up.**