Lab 1 – Speed Lab

Introduction:

Write 10 sentences that talk about the topics in chapter 11. You can use your notes, the textbook, vocabulary, etc. to help you.

Materials: (copy the materials into the lab notebook)

textbooks

white board ramp

car

timer or phone

ruler

tape

Procedure: (copy the procedure into the lab notebook)

1. Use two textbooks and the whiteboard to make a ramp for your car.
2. Measure a distance of 2 meters from the start of the ramp and mark with a piece of tape.
3. One person can hold the car at the top of the ramp. When that person releases the car, then another person should start the timer. The timer should be stopped when the car reaches the tape. If the car stops before the tape, then record the time and measure the distance.
4. Three trials should be completed. Record the times in the data table.
5. Now add two more textbooks to increase the incline of your ramp.
6. Complete three trials with the new ramp and record the data in the chart.

Data: (You can tape the data chart ONLY in the lab notebook. All other sections must be hand written in BLACK INK.)

Ramp 1 (2 textbooks)				
	Trial #1	Trial #2	Trial #3	Average

distance (m)				
time (s)				
speed (m/s)				
Ramp 2 (4 textbooks)				
	Trial #1	Trial #2	Trial #3	Average
distance (m)				
time (s)				
speed (m/s)				

**Data hints: (You do not need to copy the hints into the lab notebook)

To get the average, you add the numbers from the three trials and divide by 3.

Questions: (Copy the questions and answer them in the lab notebook)

1. What is the difference between speed and velocity?
2. A person is driving 5 m/s and makes a left turn with a constant speed. Are they accelerating?
3. A kid is riding a bike at 20 m/s. He started to go uphill and slows to 15 m/s. His acceleration was -2 m/s, so how long did it take for him to slow down? (You must show your work.)
4. What does the slope represent on a distance-time graph? On a speed-time graph?
5. The Pinewood Derby Race is a race of handmade cars down a large ramp. Research and list 3 ways that the competitors attempt to increase their cars' speed down the ramp.

Conclusion:

Write 3 sentences for the conclusion. They can be about anything that you learned, mistakes that you made during the lab, or any real life connections that you can use to relate to the lab.