Friction Matters Activity

Name: _____ Date: _____

Materials: Use the following materials to complete the experiment below.

- Toy car
- Ramp
- 2 Textbooks
- Yard Stick
- Weights, Paper Towel or Extra Textbook

Activity Step by Step: Use the following steps to complete the experiment

1. In your group of three pick your Expert Group Variable
    - YOUR EXPERT GROUP IS: _____
2. Retrieve your materials:
    - Velocity Expert = extra textbooks
    - Mass Expert = weights
    - Friction Expert = Towel
3. Control Group Trials:
    - Place 2 textbooks under one side of the ramp.
    - Place the yardstick at the end of the ramp.
    - Release the car from the top of the ramp, and use the yardstick to measure the distance between the end of the ramp and the stopped car (in centimeters). Repeat this THREE times.
4. Record your Control Group data in the chart on page 2.
5. Write a prediction on page 2, question 1.
6. Repeat the experiment three times using your experimental variable
    - Velocity Experts: raise the ramp by adding another textbook to increase velocity.
    - Mass Experts: attach a weight to the car to increase mass.
    - Friction Experts: lay the paper towels at the end of the ramp to change the friction of the surface.
7. Record your data in the chart on page 2
8. Compare your data from the Control and Experimental groups and write a brief conclusion (Note: Activity continues at end of packet.)

Predictions: Use the space below to answer the questions in complete sentences.

1. Based on what you know about the Expert Group Variable you have chosen, what do you predict will happen when your variable is added to the experiment?

_____

_____

_____

_____

Experiment Data: Add your data found in the experiment to the chart below

	Control Group	Experimental Group
Trial 1 Stopping Distance		
Trial 2 Stopping Distance		
Trial 3 Stopping Distance		
Average Stopping Distance		

Conclusion: Use the space below to answer the questions in complete sentences.

1. Based on the data that you have collected through this experiment, what can you conclude about your Expert Group Variable?

2. How can you use math to compute the stopping distance if given all the variables?

Activity Continued

1. Return to your Simulation Group.

2. In your Simulation Group, explain to the other members what data you found in your Expert Group.