Bouncing Ball
Linear Model

Show or explain how you found each answer. Simplify each answer and include units whenever appropriate.

Each group member is responsible for contributing to the activity and knowing how to do the activity.

EXERCISE #1: Bouncing a Ball

Investigate the rebound height of a tennis ball compared with the original drop height.

Instructions:

1. Tape two meter sticks (for a combined height of 2 meters to the wall).

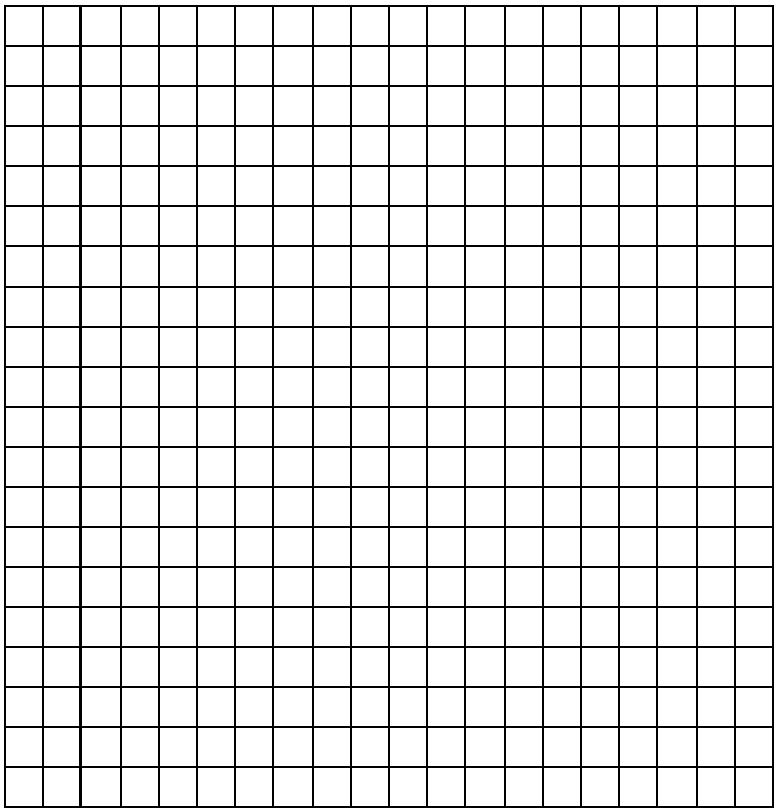
2. Hold the ball at the various height supplied in the table.

3. Let the ball drop to the floor and record the height the ball reaches on its first bounce. To avoid error in readings it is recommended that you drop the ball three times and average the recordings.

4. Record your results in the data table

Drop Height in cm	Rebound Height in cm			
	Trial 1	Trial 2`	Trial 3	Average
60				
80				
100				
150				

5. Draw and label a graph of your points.



6. Draw the line of best fit.

7. Find the slope of the line. Explain how you found your answer.

Explanation #1-7

8. Explain in your own words what the slope of the line means.

Explanation #1-8

9. Write an equation for the line of best fit. Explain how you found your answer.

Explanation #1-9

10. Use your equation to predict how high the ball will bounce if it is dropped from 120 cm.

Explanation #1-10

11. Test to see if the ball really bounces the height you have predicted when dropped from 180 cm. Explain your results.

Explanation #1-11

12. If your ball bounces 75 cm, what was the approximate drop height? Explain how you found your answer.

Explanation #1-12