An object’s momentum is the product of its mass and velocity.

1. Drop a large rubber ball from about 15 cm above a table.

2. Measure and record the ball’s rebound height.

3. Repeat steps 1–2 with a small rubber ball.

4. Hold the small rubber ball on top of, and in contact with, the large rubber ball.

5. Release the two rubber balls from the same height, so that they fall together.

6. Measure the rebound heights of both rubber balls.

7. Repeat this for 6 more heights.  
  
Complete the Table on this sheet and in the Nspire. Use the mass of the large ball, then the small one and then the sum of the two for the 7 drops.

|  |  |  |  |
| --- | --- | --- | --- |
| **Trial** | **Drop Height** | **Rebound Height** | **Mass** |
| A |  |  |  |
| A |  |  |  |
| A |  |  |  |
| B |  |  |  |
| B |  |  |  |
| B |  |  |  |
| C |  |  |  |
| C |  |  |  |
| C |  |  |  |
| D |  |  |  |
| D |  |  |  |
| D |  |  |  |
| E |  |  |  |
| E |  |  |  |
| E |  |  |  |
| F |  |  |  |
| F |  |  |  |
| F |  |  |  |
| G |  |  |  |
| G |  |  |  |
| G |  |  |  |

**Analyze and Conclude**

8. Describe the rebound height of each individual rubber ball dropped.

9. Compare and contrast the rebound heights from number 8 with those from number 6 (the two ball together).

10. Make the 7 plots and look for a mathematical model in each.