

7.4: Procedures

You will drop the g-Ball and several objects, and compare the acceleration of these items in air.

Setting the Standard

1. Draw a table in which to record the data for the g-Ball. **Do not fill in data until you have read the instructions for obtaining that data.**

Table 7.4.1: g-Ball Data

Distance (meters)	Trial 1 (seconds)	Trial 2 (seconds)	Trial 3 (seconds)	Average Time (seconds)	Average Acceleration m/s^2
1/2					
1					
2					

2. Place the bathroom rug on the floor or ground, under the place where you will be dropping the g-Ball.
3. Practice with the g-Ball so that you know how it works prior to starting the trials for your data. Drop the g-Ball 3 times from each of the heights listed in your data table, and record the time shown on the g-Ball. This is the time it took for the g-Ball to fall to the floor once released.
4. Calculate and record the average time for each of the heights from which you released the g-Ball.
5. Use the equation in the introduction and algebra to solve for the average acceleration (a). Calculate and record the average acceleration of the g-Ball for each distance dropped.

Testing Everyday Objects

6. Choose 6 objects of different masses and sizes; do not use the g-ball. Discuss how you will compare the acceleration of these objects when they are dropped from a height through air. Also, consider how you will compare the data for the 6 objects to the g-Ball. Draw a data table for the data you will be collecting.

Table 7.4.2: Everyday Objects Data

Object	Predicted Rank	Trial 1 (seconds)	Trial 2 (seconds)	Trial 3 (seconds)	Average Time (seconds)

7. List the 6 objects in your data table. Indicate next to each object, the predicted rank order for these objects to fall to the ground, from shortest time (1st) to longest time (6th).
8. Find a safe location from which to drop your 6 objects, a height of two to three stories if possible. Measure and record this distance in meters under your data table.
9. Proceed with dropping your 6 objects, 3 times each. Calculate and record the average time for each object.

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