

Free Fall – Procedure

EQUIPMENT

Two metersticks

Tennis ball

PROCEDURE

Please print the worksheet for this lab. You will need this sheet to record your data.

- 1 Use a timing device to measure the fall time for an object in free fall. We recommend using something soft that won't be damaged by hitting the ground (or damage the ground). There are three major components to doing this.
 - a Measure the height from which you drop the object. You should make it relatively high, about 2 m or so. (Should you measure from the top, bottom, or middle of the object?)
 - b The end of the fall is easy to record. The timer should try to stop the timing device as soon as the object hits the ground.
 - c The beginning of the drop needs to be coordinated between the timer and the dropper. Devise some method for starting the timing so that it is as simultaneous to the drop as possible.
- 2 Take data for five more drops, changing the height each time. **Make the different heights at least 20 cm apart.**
- 3 Calculate your experimental value of g . Use linear regression, a common mathematical method for analysis of this sort. **See the [Linear Regression](#)¹ document if you're not sure how to do this.**

¹../regression/manual.html