

**AP Physics B**  
**Experiment, Fluids**

Name: \_\_\_\_\_

The purpose of this experiment is to determine the mass of three objects: two metal squares of differing thickness and a small plastic box. You will be given a plastic box, a container of water, a ruler, and several of each of the two types of squares. You will need to devise an experiment with these materials to determine the mass of each of the two different squares and of the plastic box.

A few things to keep in mind:

- More trials and more data are good.
- A graph is even better.
- You may want to use a scale to compare your calculated masses with the actual mass of each object, but this is the only allowed use of a scale in this lab.
- It has been found that the metal squares vary in mass. To compensate for this, mass all of the squares of one size and divide by the number of squares to obtain an average mass for each individual square.

(1) Title, Names, etc. (Section 1 on the handout: Lab Write Ups)

(2) Purpose (Section 2 on the handout: Lab Write Ups)

(3) Method (Section 3 on the handout: Lab Write Ups)

This part will be incredibly important since you are devising your own method for this lab.

(4) Data (Section 4 on the handout: Lab Write Ups)

(5) Analysis (Section 5 on the handout: Lab Write Ups)

Include any graphs and/or calculations.

(6) Conclusion (Section 6 in the handout: Lab Write Ups)

You should discuss the relative merits and shortcomings of your devised procedure. What would you have done differently? What did you think was especially clever or insightful? Also discuss sources of error.