

Procedure

Record all data and observations directly in your notebook in ink.

Examine the balances that are provided in your laboratory. If you are not familiar with the operation of the type of balance available, ask your instructor for a demonstration of the appropriate technique. In particular, make certain that you are able to determine the *level of precision* permitted by each type of balance available.

Your instructor will provide you with several small objects whose mass you will determine. The objects are coded with an identifying number or letter. Record these identification codes in your notebook and on the report page.

Determine and record the mass of a small beaker that can accommodate the objects whose masses are to be determined. The determination of the beaker's mass should be to the level of precision permitted by the particular balance you are using.

Transfer the first unknown object to the beaker, and determine the combined mass of the beaker and object. Record. Determine the mass of the unknown object by subtraction. Record.

Determine and record the masses of each of the remaining objects in the same manner.

Use a *different balance* from that used earlier, and determine the masses of each of the same unknown objects on the second balance in the same manner already described (using the same beaker you used above to contain the objects). The determination of the beaker's mass should be to the level of precision permitted by the particular balance you are using.

Compare the masses of the objects as determined on the two balances. Is there a difference in the masses determined for each object? In future experiments, always use the same balance for all mass determinations in a given experiment.

Show the results of your mass determinations of the unknown objects to your instructor, who will compare your mass determinations with the true masses of the unknown objects. If there is any major discrepancy, ask the instructor for help in using the balances.

Use a *different small beaker* from that used earlier, and determine the masses of each of the unknown objects using the same two balances that were used earlier. Compare the masses of the unknown objects as determined using each beaker. Is there a significant difference in the masses determined for the objects?