

Pennies Lab

Sometime between 1977 and 1987 the U.S. Mint made a change in the composition of pennies. It's your job during this lab to determine what year the new pennies started to be produced.

- 1) One set of 10 pennies for each year in the late 1970's-1980's
- 2) A graduated cylinder
- 3) An electronic balance
- 4) Assorted beakers and Erlenmeyer flasks
- 5) Assorted test tubes

You may not damage the pennies in any way to do this lab. One thing that has proved effective in the past is an examination of the pennies' densities, so this may be a good way to start.

Your report should be written up in the following way:

- You must state what year the composition of the pennies changed.
- You must state the average mass of a penny for the year before, the year of, and the year after the change was made.
- You must state the average density of a penny for the year before, the year of, and the year after the change was made.
- You should explain whether the change was made gradually, or if it started all at once.
- You should make a guess about what metal is at the core of the new pennies (You may find it useful to look at a reference table for this).
- You should explain your possible sources of error (in other words, what do you think could possibly cause you to have an incorrect answer).
- You should have a graph showing how the density of the pennies has changed over the years.
- You should have a data table in which you have placed all of your raw data (such as weights, volumes, etc.)

Good luck!