

## Density



### Density Cylinders

**Purpose:** Demonstrates the idea of density.

With the help of a camera, this is a nice visual aid for introducing the concept of density. The (Cenco) set consists of five rods of different materials. Each rod has the same mass and cross section, so the lengths give an intuitive feeling for the relative density of each.

**Note:** To really hammer home the idea, it is not a bad idea to measure the rods and calculate a few densities. In doing so, I found an error in my old edition of Kittel's value for tin.

Each cylinder has  $M=29.0$  g and  $D=1.27$  cm.

	$L$ (cm)	$\rho$ (g/cc)	$\rho$ accepted
Al	8.11	2.82	2.70
Zn	3.16	7.24	7.13
Sn	3.10	7.38	7.31
Cu	2.57	8.91	8.93
Pb	2.03	11.28	11.34

**Extra Equipment:** Ruler, video camera.

**Location:** Shelf D4.