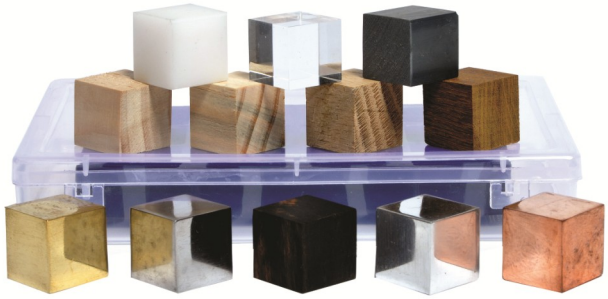
UNITED SCIENTIFIC SUPPLIES, INC.

OPERATING INSTRUCTIONS AND ACTIVITY GUIDE

DENSITY CUBE SETS

DCSET10/DCSET12

DCSET10



DCSET12

Figure 1

DESCRIPTION

These sets contains one cube each of ten/twelve different materials and a storage container. The side length of the cubes is 25 mm ±1 mm. The measured densities of these cubes will show some variation depending on the particular wood sample and the dryness. The polymer samples also exhibit a range of densities, depending on the manufacturing batch.

IDENTIFICATION OF COMPONENTS

DCSET10
- Clear Acrylic
- Aluminum
- Brass
- Copper
- Nylon
- Oak
- Pine
- PVC
- Rosewood
- Steel

DCSET12
- Acrylic (PMMA)
- Polypropylene (PP)
- Aluminum
- Brass
- Copper
- Nylon
- Lignum Vitae
- Oak
- Pine
- PVC
- Rosewood
- Steel

PRE-LAB ASSEMBLY

Gather the required materials for each lab station.
For reference, the densities of the samples are provided below.

Material	Density (g/cm^3)	DCSET10	DCSET12
Clear Acrylic	1.17—1.20	X	
Acrylic (PMMA)	1.18		X
Nylon	1.11—1.18	X	X
PVC	1.30—1.45	X	X
Aluminum	2.72	X	X
Copper	8.94	X	X
Brass	8.47 - 8.73	X	X
Steel	7.85	X	X
Oak*	0.67—0.79	X	X
Pine*	0.37—0.64	X	X
Rosewood*	0.78—1.00	X	X
Lignum Vitae*	1.12—1.33		X
Polypropylene (PP)	0.90		X

*Note: Wood samples may vary in density based on the source of the tree and the dryness.

THE DEMONSTRATION

1**. DENSITY**

$$\text{Density} = \frac{\text{Mass (grams)}}{\text{Volume } (cm^3)}$$

Materials Included: Density set

Materials Needed: Vernier calipers, digital scale or triple beam balance. If using the water displacement method you also need a graduated cylinder.

When measuring lengths, be sure to use centimeter units. Also use grams for mass measurements.