

Product Experiments - Grades 6-8

DENSITY CUBES

Common Core State Standards which will be applied include ELA-Literacy.6-8.3 and ELA-Literacy.RST.11-12.3.

The experiment also fulfills Next Generation Science requirements.

A set includes 10 or 12 cubes (aluminum, copper, nylon, PVC, steel, acrylic, pine, brass, oak and poplar) and can be used to determine density. Each cube has the same volume and different masses, thus different density. Students can measure each of the cubes and compare to the known values, which are included in each set. This set is best used during a physics lesson on density. Pupils can follow a complex multi-step procedure and take measurements which they can compare to literature.

#611-2025
Set of 10



#611-2026
Set of 12



HOW TO USE:

1. Compute differing density values unique to each material.
2. Identify the material by computing density.

You will need:

- Beaker of water
- Needle or toothpick
- Triple beam balance.

For those materials that sink, use your balance to weigh each object twice - first in air, then in water. Weigh in water by measuring the volume of water displaced when the object is fully submerged in water. To determine density, use the formula above.

For those materials that do not sink, use a toothpick or needle to push the object down to the bottom of the beaker. Hold it lightly, putting no additional pressure on it other than the force required to submerge it, and measure the volume of water displaced. Compute density with the formula above.

To determine the composition of each sample, compare the values you have determined for each density with the table on page 1 (in the provide product instructions).

Do all of the materials act as you would suspect? Do all of the wooden samples float? Do all of the metals sink? How do the plastic cubes behave?