

# Archimedes and the King's Crown

## Apparatus

a crown, made of metal or some other material (clay, play dough) and painted with metallic paint, a large measuring cylinder, a weighing scale, a table of densities, including gold and the material the crown is made from

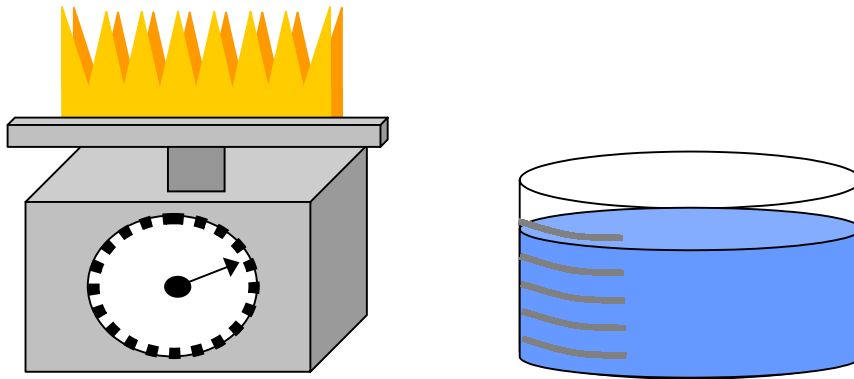
Paper towels etc for clean up.

## Action

The students weigh the crown with the scales. They immerse the crown in the measuring cylinder, and measure the increase in volume due to the crown. They then use the mass and volume to calculate the density of the crown, and compare this to the value given for gold.

## The Physics

A fully immersed object displaces its own volume of fluid. The mass divided by the volume gives the density.



## Accompanying sheet

### Archimedes and the King's Crown

Use the equipment to find the density of the crown.

Do you have a gold crown in your hands?  
If not, what is it made of?