Archimedes' Principle

Material needed:

Cube with different density (3D printing object)
Object with different irregular shape (3D printing object)
Stand and clamp
Steel wire
Electronic balance
Cup

Experimental procedure

1. Measure the weight of object
2. Measure the weight of a cup of water
3. Use wire, stand and clamp to hang the object
4. Put hanged object into water (if object sink use wire to hang it, object float use wire to push it in the water), record the weight
5. The measured weight minus the weight of the water and cup is equal to buoyancy.
6. Repeat above procedures with other objects.

Discussion

1. Calculate volume and density of different objects.
2. Compare buoyancy of different density cubes.
3. Does the weight of cubes affect buoyancy? Why?
4. Why does ship float if they build with metal which density higher than water?