

Minilab: Density and the buoyant Force. Name _____ per. _____

1. Fill a small beaker (150-200 mL) approximately 2/3 full of water.
 - a. Record the starting volume of water _____ mL
2. Place the beaker on a scale and determine the mass of system (beaker + water).
 - a. Record the mass _____
3. *Configure Sparkvue to display Force only. (check the Force Box)*
4. **Zero out** the force sensor (with only the paper-clip 'hanger' suspended from it.)
5. Begin collecting data (mainly to see what the 'weight' of the mass is)
6. Slowly lower the mass of Lead into the beaker of water.
7. Make note of the new water level and determine the VOLUME of the mass of lead.
 - a. _____ mL. = _____ cm³
 - b. Record the 'new' mass of the system with the lead weight immersed. _____
 - c. How has the weight of the system changed? _____
8. Stop collecting Data and carefully lift the mass of lead out of the water (don't break the beaker!)
9. Looking at your graph of Force in Time..
 - a. Original weight of mass when suspended ABOVE the water. _____ Newtons.
 - b. New weight of mass when immersed IN water _____
 - c. Buoyant Force supplied by water. _____
10. Determine what the weight of water must have been based on the measured volume of the water displaced?
11. How does the weight of the water displaced compare to the Buoyant Force?