

# Density Worksheet

Name \_\_\_\_\_  
Class Hour \_\_\_\_\_

1. Define mass?
2. Define volume?
3. Define density and show the formula for calculating density.
4. Why does changing the shape of an object have no effect on the density of that object?
5. Aluminum is used to make airplanes. Cast iron is used to make weightlifting equipment. Explain why the densities of these metals make them useful for these purposes?

6. What is the density of water? Remember for water  $1g=1ml=1cm^3$
7. Why does an air bubble rise to the surface of a glass of water?
8. Calculate the densities of the following objects. **Remember to place units after each number.**

**Object A**    length = 6cm            width = 3cm            height = 1cm            mass = 36g  
                  volume = \_\_\_\_\_            density = \_\_\_\_\_

**Object B**    length = 10cm            width = 5cm            height = 2cm            mass = 300g  
                  volume = \_\_\_\_\_            density = \_\_\_\_\_

**Object C**    Use the water displacement method to determine the density of object C (silly putty).  
                  initial water level in graduated cylinder = 25ml  
                  final water level after placing silly putty into graduated cylinder = 29ml  
                  mass of silly putty=8g

                  volume = \_\_\_\_\_            density = \_\_\_\_\_

9. Which of the following materials will float on water (density 1 g/ml)?

air =	.001 g/cm <sup>3</sup>
corn oil =	.93 g/cm <sup>3</sup>
glycerine =	1.26 g/cm <sup>3</sup>
corn syrup =	1.38 g/cm <sup>3</sup>
wood =	.85 g/cm <sup>3</sup>
steel =	7.81 g/cm <sup>3</sup>
rubber =	1.34 g/cm <sup>3</sup>
ice =	.92 g/cm <sup>3</sup>
water =	1.00 g/cm <sup>3</sup>

10. Assuming the materials don't mix, show how the materials would "stack up" in a graduated cylinder.

11. What happens to density when mass decreases but volume stays the same? (Remember  $\text{density} = \frac{\text{mass}}{\text{volume}}$ )

12. What happens to density when volume decreases but mass stays the same?