

## ACTIVITY # 3.2 Volume and Density

Date due: \_\_\_\_\_

23

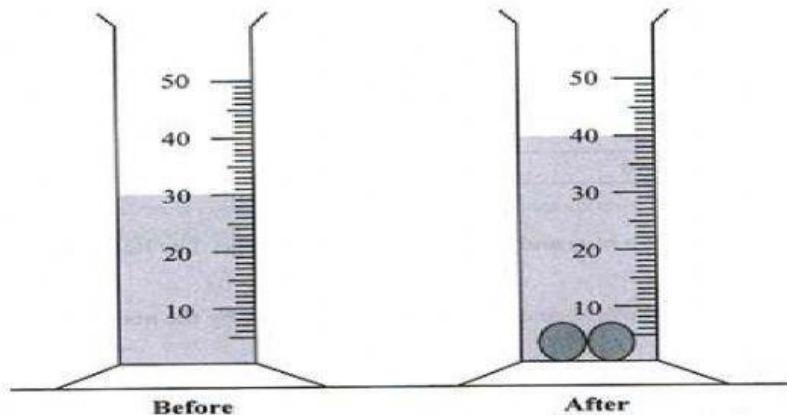
1. A student finds the mass and volume of the three solids as shown in the table. Which object is denser?

Object	Mass (g)	Volume (cm <sup>3</sup> )
A	0.5	0.1
B	10	20
C	50	75
D	12	13

2. The table shows the mass, volume and density for four substances. Which substance has the correct density?

Substance	Mass (kg)	Volume (m <sup>3</sup> )	Density (g/cm <sup>3</sup> )
A	10.0	3.0	0.33
B	0.5	5.0	0.1
C	6.0	24.0	4.0
D	20.0	10.0	0.5

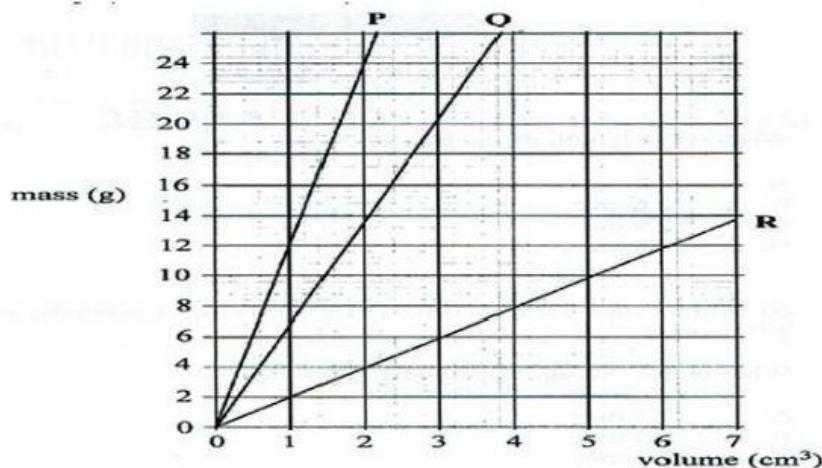
3. Two identical stones with a total mass of 50 grams were placed in 30 cm<sup>3</sup> of water in a measuring cylinder. The water level increases to 40 cm<sup>3</sup>.



What is the density of the stones?

A. 1.25 g/cm <sup>3</sup>	C. 5.0 g/cm <sup>3</sup>
B. 1.70 g/cm <sup>3</sup>	D. 10 g/cm <sup>3</sup>

4. A student measures the mass and volume of different blocks made from materials P, Q, and R. A graph of the results is plotted.



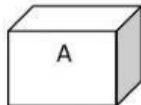
What is the density of the three materials?

Materials	Density (g/cm³)		
	P	Q	R
A	12	7	2
B	12	2	7
C	2	12	7
D	7	2	12

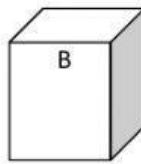
5. A metal cube is heated. What effect does this have on the cube's volume, mass and density?

	VOLUME	MASS	DENSITY
A	Same	Same	Same
B	Increase	Same	Decrease
C	Increase	Increase	Decrease
D	increase	increase	increase

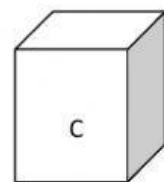
6. The diagram shows four cubes



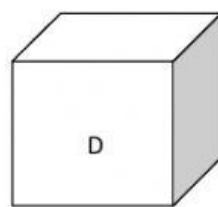
mass = 20g  
volume =  $5\text{cm}^3$



mass = 48g  
volume =  $8\text{cm}^3$



mass = 75g  
volume =  $15\text{cm}^3$



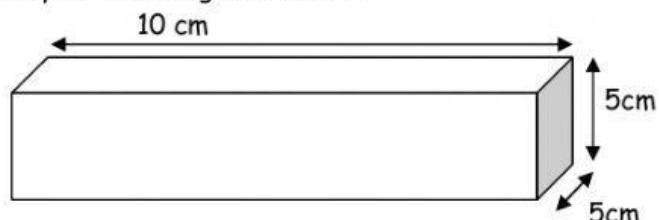
mass = 100g  
volume =  $30\text{cm}^3$

Which cube has the greatest density?

7. When water is heated which two quantities will change?

- A. Density and mass
- B. Density and volume
- C. Mass and volume
- D. Volume and weight

8. Calculate the density of the 200g block shown.



- A.  $0.8\text{ g/cm}^3$
- B.  $1.25\text{g/cm}^3$
- C.  $4.0\text{ g/cm}^3$
- D.  $8.0\text{ g/cm}^3$

9. The masses and volume of four substances A,B,C and D were measured and recorded in the chart. From the data collected, suggest which of the substances is water?

	Mass (g)	Volume ( $\text{cm}^3$ )
A	1 000	1
B	100	100
C	200	100
D	1	1000