Density

We	can compare	the weights of thir	ngs made of differer	nt materials.				
For	a fair test, we	weigh objects mad	de of different mate	rials which have th	ne			
1 c	m^3 of iron is h	eavier than $1\mathrm{cm}^3$ c	of plastic.					
Thi	This is because the has more even though the is the same.							
Iro	Iron is more than plastic.							
Gla	Glass marbles in water. This means that glass is dense than water.							
A c	ork in w	ater. This means th	at cork is	than water.				
1	"Iron is heavier than wood." This is not true. Give an example of something made of wood, and something made of iron where the wooden object is heavier.							
	(a) Object ma	ade of wood:						
	(b) Object ma	ade of iron:						
2	Rewrite "Iron is heavier than wood" to make it scientifically correct.							
	(a) Rewrite it using the word dense .							
	(b) Rewrite it	without using the v	words dense or den	sity . Explain what	you meant in (a).			
3	material, and	5 against the most	er them in order of d t dense. (c) water	,				
			f material. It enable		ompared.			
A 1	00 cm ³ block o	of iron has a mass of	$790 \mathrm{g.}\mathrm{So}\mathrm{1cm^3}\mathrm{of}\mathrm{ir}$	on has a mass of	<u> </u>			
The	e of irc							
4	Calculate the density of these materials in g/cm^3 .							
	(a) Uranium: 20 cm ³ has a mass of 380 g.							
	(b) Lead: 60 cm ³ has a mass of 660 g.							

5	The volumes of liquids are measured in m ℓ (millilitres). $1~{\rm m}\ell={\rm _cm^3}$. Calculate the density in g/cm 3 of						
	(a) Olive oil, if $750~\text{m}\ell$ has a mass of $675~\text{g}$,						
	(b) Water, if $350~\text{m}\ell$ has a mass	s of 350 g.					
	ver has a density of $10~\rm g/cm^3$. The mass of $15~\rm cm^3$ of silver will $\rm k$						
6	Calculate the mass in grams of						
	(a) $200 \mathrm{cm}^3$ of flour with a density of $0.8 \mathrm{g/cm}^3$,						
	(b) 60 cm^3 of cheese with a density of 1.1 g/cm^3 .						
	y has a density of $1.5\mathrm{g/cm^3.~1}$ th lump has a volume of		lots of 1.5 g lumps .				
7	Calculate the volume in cm ³ of						
	(a) 39 g of chocolate with a density of 1.3 g/cm^3 ,						
	(b) $112~{\rm g}$ of treacle with a density of $1.4~{\rm g/cm^3}$.						
8	Complete the word equations using Density , Mass and Volume .						
	(a) Density =	(b) Mass =	(c) Volume =				
9	Rewrite your word equations using symbols. ρ (rho) is the density, m is the mass and V is the volume.						
	(a) $\rho =$	(b) $m =$	(c) $V =$				

10 A gold bar is a $15 \, \text{cm} \times 8 \, \text{cm} \times 6 \, \text{cm}$ rectangular block. The density of gold is $19 \, \text{g/cm}^3$.

(a) Calculate the volume in cm³.

(b) Calculate the mass in grams.

(c) If each gram of gold is worth $\pounds 50$, calculate the cost of the bar.

