COMPOUND MEASURES

Keywords:	Compound / Density / Pressure / Newton			
Definition / Description:	**Compound:** A Mixture	**Density:** an objects mas per unit volume	**Pressure:** Force per unit area	**Newton:** Unit for weight and force
Knowledge points:	**Speed Distance, Time:** Speed = Distance ÷ Time	**Average Speed:** Total Distance ÷ Total Time	**Density:** Density = Mass ÷ Volume	**Pressure:** Pressure = Force ÷ Area
Knowledge point examples:	If I travel 72 miles in 3 hours what is my speed? Speed = Distance ÷ Time 72 miles ÷ 3 hours = **24mph** Mark cycles 42 km at an average speed of 14 km/h. How long does it take him? Time = distance ÷ Speed 42km ÷ 14km/h = **3 hours** A bird flies for 40 minutes at an average speed of 11m/s. How far does the bird fly in kilometres? 40 minutes = 2400 seconds Distance = Speed x Time 11m/s x 2400s = 26400m = **26.4km**	A car travels 60km at 30 km/h and then a further 180km at 160 km/h. Find: a) the total time taken in hours: Time = distance ÷ Speed = = 60 ÷ 30 = 2 hours = 180 ÷ 160 = 1.125 hours =**3.125hrs** b) the average speed for the whole journey Speed = Distance ÷ Time = (60 + 180) ÷ 3.125 =**76.8 km/h**	A piece of silver has a mass of 42g and a volume of $4cm^3$. Work out the density of silver Density = Mass ÷ Volume =42g ÷ $4cm^3$ = **10.5 g/cm³** A 50g piece of wood which has a density of 0.4g/cm³ Work out the volume of the block. Volume = Mass ÷ Density 50g ÷ 0.4g/cm³ = **125cm³**	A force of 30 Newtons is applied to an area of 1.5 m^2. Work out the pressure in N/m^2 Pressure = Force ÷ Area 30N ÷ $1.5m^2$ = **$20N/m^2$** A force is applied to an area of 4.5 m^2. It produces pressure of 12 N/m^2. Work out the force in Newtons. Force = Pressure x Area $12N/m^2$ x $4.5m^2$ = **54N**
Linked Knowledge Maps	Non-compound measures / Bounds			