STM Knowledge Organiser Year: 9 Subject: Maths Topic: Compound Measures

Core Knowledge

Topic/Skill       Definition/Tips       Example         1. Metric       A system of measures based on:       1 kilometres = 1000 metres         System       - the metre for length       1 metre = 100 centimetres         - the kilogram for mass       1 centimetre = 10 millimetres         1 kilogram = 1000 grams         Length: mm, cm, m, km       Mass: mg, g, kg         Volume: ml, cl, 1       1 kilogram = 1000 grams         2. Imperial       A system of weights and measures originally developed in England, usually based on human quantities       1 foot = 12 inches         Mass: lb, ounce, stone       Volume: pint, gallon       5 miles ≈ 8 kilometres         1 gallon ≈ 4.5 litres       2.2 pounds ≈ 1 kilogram         1 inch = 2.5 centimetres       2.2 pounds ≈ 1 kilogram         1 inch = 2.5 centimetres       2.2 pounds ≈ 1 kilogram         1 inch = 2.5 centimetres       2.2 pounds ≈ 1 kilogram         1 inch = 2.5 centimetres       2.2 pounds ≈ 1 kilogram         1 inch = 2.5 centimetres       2.2 pounds ≈ 1 kilogram         1 inch = 2.5 centimetres       2.2 pounds ≈ 1 kilogram         1 inch = 2.5 centimetres       2.2 pounds ≈ 1 kilogram         1 inch = 2 hours       3 miles         4. Speed, Distance ÷ Speed       5 miles         Bensity = Mass ÷ Volume       4 miles     <
System  - the metre for length - the kilogram for mass - the second for time  - the kilogram for mass - the second for time  - the kilogram for mass - the second for time  - the kilogram for mass - the second for time  - the kilogram for mass - the second for time  - the kilogram for mass - the second for time  - the kilogram for mass - the second for time  - the metre for length - the kilogram for mass - the second for time  - the metre for length - the kilogram for mass - the second for time  - the metre for length - the kilogram for mass - the second for time  - the metre for length - the kilogram for mass - the second for time  - 1 kilogram = 1000 grams  - 1 lb = 16 ounces - 1 gallon = 8 pints  - 1 gallon = 8 pints  - 1 gallon = 8 pints  - 1 gallon = 8 pints - 1 gallon = 8 pints  - 1 gallon = 8 pints - 1 gallon = 4.5 litres - 2.2 pounds = 1 kilogram - 1 inch = 2.5 centimetres  - 1 gallon = 4.5 litres - 2.2 pounds = 1 kilogram - 1 inch = 2.5 centimetres  - 1 gallon = 4.5 litres - 2.2 pounds = 1 kilogram - 1 inch = 2.5 centimetres  - 1 gallon = 8 pints - 2 pounds = 1 gallon = 8 pints - 2 pounds = 1 kilogram - 1 inch = 2.5 centimetres - 1 gallon = 4.5 litres - 2.2 pounds = 1 kilogram - 1 inch = 2.5 centimetres - 1 gallon = 8 pints - 1 gallon = 1 gallon - 2 pounds = 1 kilogram - 1 pints - 2 pounds = 1 kilogram - 1 pints - 2 pounds = 1 kilogram - 1 pints - 2 pounds = 1 kil
- the metre for length - the kilogram for mass - the second for time    1 centimetre = 10 millimetres
- the kilogram for mass - the second for time  Length: mm, cm, m, km Mass: mg, g, kg Volume: ml, cl, l  2. Imperial System  A system of weights and measures originally developed in England, usually based on human quantities  Length: inch, foot, yard, miles Mass: lb, ounce, stone Volume: pint, gallon  3. Metric and Imperial Units  Use the unitary method to convert between metric and imperial units.  5. Speed, Distance, Time  Remember the correct units.  Beautiful Mass = Density = Mass ÷ Volume Mass, Volume  Mass = Density × Volume Volume = Mass ÷ Density  Mass = 2000g  1 kilogram = 1000 grams  1 kilogram = 1000 grams  1 kilogram = 10 inches 1 foot = 12 inches 1 gallon = 8 pints  1 smles ≈ 8 kilometres 1 gallon ≈ 4.5 litres 2.2 pounds ≈ 1 kilogram 1 inch = 2.5 centimetres  Speed = 4mph Time = 2 hours Find the Distance.  D = S × T = 4 × 2 = 8 miles  5. Density = Mass ÷ Volume Mass = Density × Volume Volume = Mass ÷ Density  Mass = 2000g
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Imperial Units between metric and imperial units. $\begin{array}{c} 1 \ gallon \approx 4.5 \ litres \\ 2.2 \ pounds \approx 1 \ kilogram \\ 1 \ inch = 2.5 \ centimetres \\ \end{array}$ 4. Speed, Distance = Distance ÷ Time Distance = Speed x Time Time = Distance ÷ Speed $\begin{array}{c} Speed = 4mph \\ Time = 2 \ hours \\ Find the Distance. \\ \hline D = S \times T = 4 \times 2 = 8 \ miles \\ \hline S = 8$
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Distance, Time   Distance = Speed x Time   Time = 2 hours    Find the Distance. $D = S \times T = 4 \times 2 = 8 \text{ miles}$ Remember the correct units.  5. Density,   Density = Mass $\div$ Volume   Mass = Density x Volume   Mass = Density x Volume   Mass = 2000g    Volume = Mass $\div$ Density   Mass = 2000g
Distance, Time  Time = Speed x Time  Time = Distance ÷ Speed  Find the Distance. $D = S \times T = 4 \times 2 = 8 \text{ miles}$ Remember the correct units.  5. Density, Mass, Volume  Mass = Density x Volume  Volume = Mass ÷ Density  Mass = 2000g
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Remember the correct units.  5. Density, Mass, Volume  Mass = Density x Volume  Volume = Mass ÷ Density  Mass = 2000g
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5. Density, Mass, Volume  Mass = Density x Volume  Volume = Mass ÷ Density  Density = 8kg/m³  Mass = 2000g
Mass, Volume Volume = Mass ÷ Density  Mass = 2000g  Mass = 2000g
Volume = Mass ÷ Density
Find the Volume.
$V = M \div D = 2 \div 8 = 0.25m^3$
Remember the correct units.
6. Pressure, <b>Pressure = Force</b> ÷ <b>Area</b> Pressure = 10 Pascals
Force, Area   Force = Pressure x Area   Area = $6 \text{cm}^2$
Force, Area   Force = Pressure x Area   Area = 6cm <sup>2</sup>   Area = Force ÷ Pressure

## STM Knowledge Organiser Year: 9 Subject: Maths

## Core Knowledge

	P X A	$F = P \times A = 10 \times 6 = 60 N$
	Remember the correct units.	
7. Distance- Time Graphs	You can find the <b>speed</b> from the <b>gradient</b> of the line (Distance ÷ Time) The steeper the line, the quicker the speed. A <b>horizontal</b> line means the object is not moving ( <b>stationary</b> ).	Distance (Kmi)

Links to area of 2 D shapes, units, combining units, ratio and proportion