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| **Topic/Skill**  | **Definition/Tips** | **Example****Topic: Compound Measures**  |
| 1. Metric System | A system of measures based on:* the metre for length
* the kilogram for mass
* the second for time

**Length: mm, cm, m, km****Mass: mg, g, kg****Volume: ml, cl, l** | $$1kilometres=1000 metres$$$$1 metre=100 centimetres$$$$1 centimetre=10 millimetres$$$$1 kilogram=1000 grams$$ |
| 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** | $$1lb=16 ounces$$$$1 foot=12 inches$$$$1 gallon=8 pints$$ |
| 3. Metric and Imperial Units | Use the **unitary method** to convert between metric and imperial units. | $$5 miles≈8 kilometres$$$$1 gallon≈4.5 litres$$$$2.2 pounds≈1 kilogram$$$$1 inch=2.5 centimetres$$ |
| 4. Speed, Distance, Time | **Speed = Distance ÷ Time****Distance = Speed x Time****Time = Distance ÷ Speed**Image result for speed distance time triangleRemember the correct units. | Speed = 4mphTime = 2 hoursFind the Distance.$$D = S × T = 4 × 2 = 8 miles$$ |
| 5. Density, Mass, Volume | **Density = Mass ÷ Volume****Mass = Density x Volume****Volume = Mass ÷ Density**Image result for dmv triangleRemember the correct units. | Density = 8kg/m³Mass = 2000gFind the Volume.$$V = M ÷ D = 2 ÷ 8 = 0.25m³$$ |
| 6. Pressure, Force, Area | **Pressure = Force ÷ Area****Force = Pressure x Area****Area = Force ÷ Pressure**Image result for pressure triangleRemember the correct units. | Pressure = 10 PascalsArea = 6cm²Find the Force$$F=P×A=10×6=60 N$$ |
| 7. Enlargement | The shape will get **bigger or smaller**. Multiply each side by the **scale factor**. | Scale Factor = 3 means ‘3 times larger = multiply by 3’Scale Factor = ½ means ‘half the size = divide by 2’ |

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| **Topic/Skill**  | **Definition/Tips** | **Example****Topic: Calculating with Percentages**  |
| 1. Increase or Decrease by a Percentage | Non-calculator: **Find the percentage** and **add** or **subtract** it from the **original** amount.Calculator: Find the **percentage multiplier** and multiply. | Increase 500 by 20% (Non Calc):10% of 500 = 50so 20% of 500 = 100500 + 100 = 600Decrease 800 by 17% (Calc):100%-17%=83%83% ÷ 100 = 0.830.83 x 800 = 664 |
| 2. Percentage Multiplier | The **number** you **multiply** a quantity by to **increase or decrease** it by a **percentage**. | The multiplier for increasing by 12% is 1.12The multiplier for decreasing by 12% is 0.88The multiplier for increasing by 100% is 2. |
| 3. Reverse Percentage | Find the **correct percentage given in the question**, then work backwards to **find 100%**Look out for words like ‘**before’** or ‘**original’** | A jumper was priced at £48.60 after a 10% reduction. Find its original price.100% - 10% = 90%90% = £48.601% = £0.54100% = £54 |
| 4. Simple Interest | Interest calculated as a **percentage of the original** amount. | £1000 invested for 3 years at 10% simple interest.10% of £1000 = £100Interest = $3×£100=£300$ |

**Knowledge Organiser**