Edward Peake Church of England Middle School		
Topic: Converting Units	**Year: 6**	**NC Strand: Measurement**

What should I already know?

- How to convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)
- How to understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
- How to solve problems involving converting between units of time
- How to use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.

What will I know by the end of the unit?

- How to use and understand Metric measures
- How to convert metric measures
- How to calculate with metric measures
- How to convert miles and kilometres
- How to use and understand imperial measures

Key Information/Diagrams

Time

Minute 1 minute = 60 seconds

Hour 1 hour = 60 minutes

Day 1 day = 24 hours

Week 1 week = 7 days

Year 1 year = 12 months = 52 weeks = 365 days

Miles to Kilometres

You might measure the length of a road or the distance between two cities in miles or kilometres.

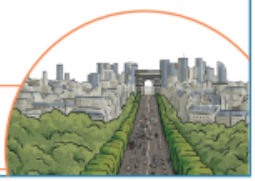
÷ 5 → × 8

miles (m) ⇄ kilometres (km)

× 5 ← ÷ 8

5 miles = 8 kilometres

≈ means approximately equal to



Converting Mass

1 tonne = 1000kg

1000g = 1kg

$\frac{1}{10}$kg = 0.1kg = 100g

$\frac{1}{4}$kg = 0.25kg = 250g

$\frac{1}{2}$kg = 0.5kg = 500g

$\frac{3}{4}$kg = 0.75 = 750g

÷ 1000 → grams (g) → ÷ 1000 → kilograms (kg) → ÷ 1000 → tonnes (t)

× 1000 ← × 1000 ← × 1000

Converting Capacity

1000ml = 1l

$\frac{1}{10}$l = 0.1l = 100ml

$\frac{1}{4}$l = 0.25l = 250ml

$\frac{1}{2}$l = 0.5l = 500ml

$\frac{3}{4}$l = 0.75l = 750ml

$\frac{1}{100}$l = 0.01l = 10ml

÷ 1000 → millilitre (ml) → litres (l) → × 1000

Imperial Measures

Things that could be measured using imperial units:

- Someone's height in feet and inches
- The mass of a bag of sugar in ounces
- The mass of a sack of potatoes in pounds
- A person's mass in stones
- A carton of milk in pints
- The amount of water in a bath in gallons

1 foot = 12 inches

1 pound = 16 ounces

1 stone = 14 pounds

1 gallon = 8 pints

Converting Length

1000m = 1km

100cm = 1m

10mm = 1cm

$\frac{1}{2}$m = 0.5m = 50cm

$\frac{1}{4}$m = 0.25m = 25cm

$\frac{3}{4}$m = 0.75m = 75cm

$\frac{1}{10}$m = 0.01m = 10cm

÷ 10 → millimetres (mm) → ÷ 100 → centimetres (cm) → ÷ 1000 → metres (m) → kilometres (km)

× 10 ← × 100 ← × 1000

Metric to Imperial Conversions

metric (new)	imperial (old)
2.5 centimetres	1 inch
1 kilogram	2.2 pounds
4.5 litres	1 gallon

÷ 2.5 → centimetres → inches → × 2.5

÷ 4.5 → litres → gallons → × 4.5

÷ 2.2 → kilograms → pounds → × 2.2

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Key Questions	
Which units measure length? Mass? Capacity? When would you use km instead of m? When would you use mm instead of cm? Which is the most appropriate unit to use to measure the object? Explain your answer. Why do you think _____ is not an appropriate estimate? How could you work out what each mark is worth on the scales? What do you think would be the most efficient method for converting the units of time? What's the same and what's different between 1.5 km and 1.500 km? Are the zeroes needed? Why or why not? What do you notice about the amounts in the table? Can you spot a pattern? What's the same and what's different about km and kg? What operation are you going to use and why? How could you use a bar model to help you understand the question? How many ___ are there in a ___? How can we convert between ___ and ___?	Give an example of a length you would measure in miles or km. If we know 5 miles ≈ 8 km, how can we work out 15 miles converted to km? Can you think of a situation where you may need to convert between miles and kilometres? Put these in order of size: 1 cm, 1 mm, 1 inch, 1 foot, 1 metre. How do you know? When do we use imperial measures instead of metric measures? Why are metric measures easier to convert than imperial measures?

Vocabulary			
Mass	Litre	Kilometre	Pound
Gram	Millilitre	Metre	Stone
Kilogram	Centilitre	Foot	Pint
Capacity	Millimetre	Inch	Gallon
Volume	Centimetre	Ounce	

Investigate/Homework tasks

- Homework will be set by your teacher using google classroom
- You should complete at least 30 minutes of maths tasks using the website and log in provided by your teacher. Please attend help sessions if you do not have access to the internet at home
- Additional work you could complete:
  - Find out more about the meaning of the vocabulary list using http://www.amathsdictionaryforkids.com/
- To challenge yourself: Answer the key questions to deepen your knowledge