| GCSE - **Numeracy and Mathematics**

Topic: Converting units (metric & imperial) | **Tier: Intermediate** | **Grade:**

D | |

Starter:

1. Convert 25cm to metres

2. Convert 26g to kg

3. Convert 3 miles to km

4. Convert 20 pints to litres

Top Tips!

- "Cent" means 1/100th of a unit
- "Kilo" means 1000
- 8km = 5 miles (or 1.6km = 1 mile)
- 1kg = 2.2lb
- 1litre = 1.75 pints ("a litre of water is a pint and three quarters")
- 1 litre = 1000cm^3
- When converting units, always look at the conversion rate and decide carefully whether to multiply or divide by the conversion rate.

Skills:

1. Osian is selling drinks at a local charity fundraiser. He has brought with him 12 litres of lemonade and plans to serve them in half-pint glasses. Roughly how many lemonade drinks can he sell?

2. Sioned is shopping for a new car and finds one that can go 50 miles per gallon of petrol. If a litre of petrol costs £1.10, how much would it cost her per mile?

Examination Question:

2014 January Link Applications U2 Higher Q5

(a) Eleri spent £1220.18 on diesel for her car last year. Given the information below, calculate how many miles Eleri travelled in her car last year. Give your answer correct to 3 significant figures.

- 1 gallon is approximately 4·55 litres.
- The average cost of diesel last year was £1.69 per litre.
- On average, Eleri's car does 42·9 miles per gallon. [5]

(b) The fuel tank in Dewi's car holds 80 litres. What is the capacity of Dewi's fuel tank in m^3? [3]

Assessment for Learning

Video / QR code

GCSE - **Numeracy and Mathematics** **Topic: Converting units (metric & imperial)**	**Tier:** Intermediate	**Grade:** D	GwE

Starter:

1. Convert 25cm to metres
   0.25m
2. Convert 26g to kg
   0.026kg
3. Convert 3 miles to km
   3 x 1.6 = 4.8km
4. Convert 20 pints to litres
   20 ÷ 1.75 = 11.4 pints

Top Tips!

- "Cent" means 1/100th of a unit
- "Kilo" means 1000
- 8km = 5 miles (or 1.6km = 1 mile)
- 1kg = 2.2lb
- 1litre = 1.75 pints ("a litre of water is a pint and three quarters")
- 1 litre = 1000cm^3
- When converting units always look at the conversion rate and decide carefully whether to multiply or divide by the conversion rate

Skills:

1. Osian is selling drinks at a local charity fundraiser. He has brought with him 12 litres of lemonade and plans to serve them in half-pint glasses. Roughly how many lemonade drinks can he sell?
   Convert litres to pints
   12 x 1.75 = 21 pints
   1 pint makes 2 glasses, so number of glasses:
   21 x 2 = 42 glasses
2. Sioned is shopping for a new car and finds one that can go 50 miles per gallon of petrol. If a litre of petrol costs £1.10, how much would it cost her per mile?
   1 gallon = 4.5 litres
   50 miles on 4.5 litres of petrol.
   On 1 litre of petrol she can travel
   50 ÷ 4.5 = 11.1….miles
   1 mile costs: £1.10 ÷ 11.11…
   = £0.099 (10p to nearest p)

Examination Question:

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- 1 gallon is approximately 4·55 litres.
- The average cost of diesel last year was £1.69 per litre.
- On average, Eleri's car does 42·9 miles per gallon. [5]

(b) The fuel tank in Dewi's car holds 80 litres. What is the capacity of Dewi's fuel tank in m^3? [3]

(a) Litres used = 1220.18 ÷ 1.69 = 722
Gallons used = 722 ÷ 4.55 = 158.681319…
Miles travelled = 158.681319… x 42.9 = 6807.4285…
Correct to 3 significant figures = 6810 miles

(b) 1 litre = 1000cm^3
80 litres = 80000cm^3
1m^3 = 100 x 100 x 100 cm^3
1m^3 = 1000000cm^3
1cm^3 = 0.000001m^3
80000cm^3 = 0.08m^3

Assessment for Learning

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