Teacher Activity E: Handling units in calculations

Here is a simple calculation:

A cyclist is travelling at 4 m/s. How far do they travel in 5 seconds?

a) The following are two different ways of setting out the calculation. Which of these two methods do you prefer? Why?

Method 1	Method 2
From the question:	Let distance = s metres
speed = 4 m/s	speed = u metres per second
time = 5 s	time = t seconds
Using the formula:	Using the formula:
distance = speed $\times$ time	s = ut
= 4 m/s $\times$ 5 s	= 4×5
= 20 m	= 20
So, the distance traveled is 20 metres.	So, the distance traveled is 20 metres.

b) Is this the way you would do it, or would you set out the calculation differently?

c) How would you handle the units in the following simple calculations?

- What is the mass of 10 cm^3 of iron (density = 8 g/cm^3)?

- In an electrical circuit, what is the work done when a 2 W lamp is on for 5 seconds? (work done = power x time)

- What is the volume of 40 g of iron (density = 8 g/cm^3)?

Further information: *The Language of Mathematics in Science: A Guide to Teachers of 11-16 Science*, Section 2.1 Calculations and units (pp 14-15)

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