

0	1		1
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A cell membrane measures 8nm across. Convert this into micrometers [1 mark]

$$8/1000 = 0.008 \text{ micrometers}$$

0	1	.	2
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A plant cell measures 100 micrometers in length. Convert this into standard form. Ensure it is in meters.

[2 marks]

$$100 \text{ micrometers}/1000 = 0.1 \text{ mm}$$

$$0.1\text{mm}/1000 = 0.0001\text{m} [1]$$

$$0.0001\text{m} = 10^{-4}\text{m}$$

0	1	.	3
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A HIV virus measures $1 \times 10^{-7}\text{m}$ in diameter. Convert this into nm (non-standard form)

[2 marks]

$$0.0000001\text{m} [1]$$

$$\times 1000 = 0.0001\text{mm}$$

$$\times 1000 = 0.1\text{micrometers}$$

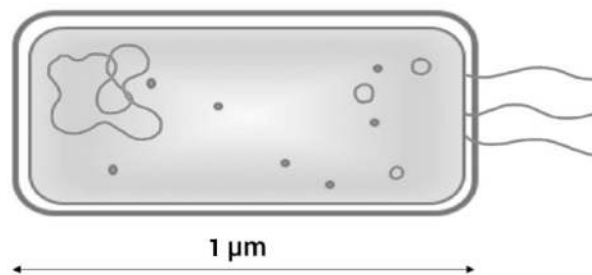
$$\times 1000 = 100\text{nm} [1]$$

0	1	.	4
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A red blood cell measures 7 micrometers in diameter. How many times larger is it then the prokaryotic cell below?

[2 marks]

7 x bigger



0	1	.	5
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The head of a pin is approximately 1mm in diameter. How many prokaryotic cells, like the one pictured above, would fit across the length of the pin head?

[2 marks]

1000

0	2
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.

1

The unit that is equal to $1 \times 10^{-2}\text{m}$ is a centimetre. What is the name given to the unit that is equal to $1 \times 10^{-9}\text{m}$?

[1 mark]

nanometer

(there are 100 cm in a meter which equates to $1 \times 10^{-2}\text{m}$ in standard form and there are 1,000,000,000 nm in a meter which equates to $1 \times 10^{-9}\text{m}$ in standard form)

0	2
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2

By how many orders of magnitude is a centimetre larger than a micrometer?

[1 mark]

4

(cm is $1 \times 10^{-2}\text{m}$ and a micrometer is written as 1×10^{-6} in standard form. To answer this question you work out the difference in the powers which is $6-2 = 4$)