

Name: _____

Date: _____

Consider some common units that you use **every day**:

length.
metric system

- centimetres, metres, mm
- inches, miles, yards
- litres, mL
- kilograms
- volts, amps, watts, ohms
- hours, minutes, seconds, years, weeks, months.
- pounds, dollars

Can you move between different 'levels' in systems?

Example Time.

nanosecond μs	millisecond	second	minute	hour	day	week
	1000 ms = 1 sec	60 s = 1 min	60 min = 1 hr	24 hrs = 1 day	7 days = 1 week	

1 000 000 μs = 1 ms

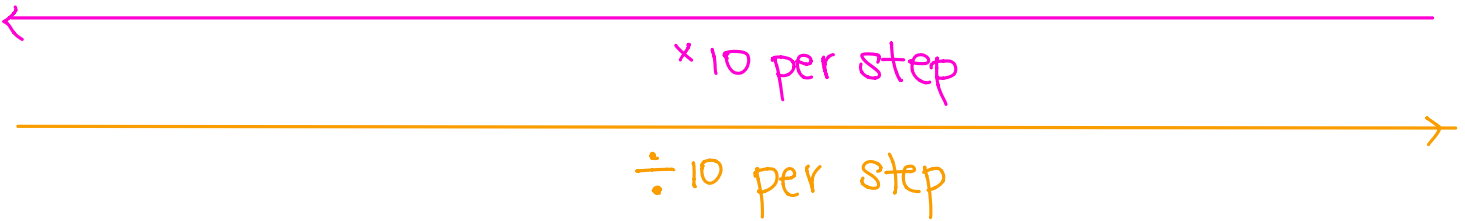
$\frac{3}{2} \times \frac{2}{1} = 3$

$$\begin{aligned}
 27 \text{ min} \left(\frac{1 \text{ hr}}{60 \text{ min}} \right) &= \frac{27}{60} \text{ hrs} \\
 &= \frac{9}{20} \text{ hrs} \left(\frac{1 \text{ day}}{24 \text{ hrs}} \right) \\
 &= \frac{9}{480} \text{ days} \\
 &\doteq 0.02 \text{ days}
 \end{aligned}$$

↑
special version of 1

Example Distance.

		decimetre		decametre	hectametre	
mm	cm	dm	m	dam	hm	km
1 000 000	100 000	10 000	1000	100	10	1



$$11 \cancel{\text{hm}} \times \frac{100 \text{ m}}{1 \cancel{\text{hm}}} = 1100 \text{ m}$$

$$11 \text{ m} \times \frac{1 \text{ km}}{1000 \text{ m}} = 0.011 \text{ km}$$

Example Volume.

mL	cL	dL	L	daL	hL	kL
1 000 000	100 000	10 000	1000	100	10	1

centilitre decilitre

decalitre hectalitre kilolitre.

$$13 \cancel{\text{L}} \times \frac{1000 \text{ mL}}{1 \cancel{\text{L}}} = 13\,000 \text{ mL}$$

$$1.3 \cancel{\text{L}} \times \frac{1 \text{ kL}}{1000 \cancel{\text{L}}} = 0.0013 \text{ kL}$$

~~$$1.3 \text{ L} \times \frac{1000 \text{ L}}{1 \text{ kL}} = \frac{\text{L}^2}{\text{kL}}$$~~