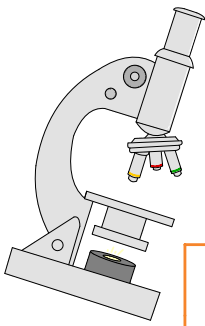


Calculating Magnification



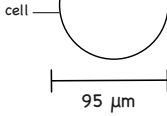
magn

large

ify

to make

in science, magnification is the number of times larger an image is than the actual object



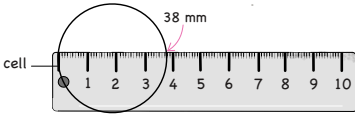
step 1. recall the formula

$$\text{magnification} = \frac{\text{image size}}{\text{actual size}}$$

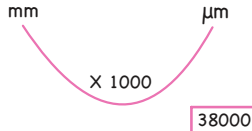
step 2. identify given values



step 3. measure the image size



step 4. convert units



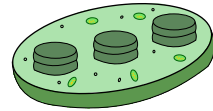
$$\text{magnification} = \frac{\text{image size}}{\text{actual size}}$$

$$\text{magnification} = \frac{38000}{95}$$

$$\text{magnification} = \times 400$$

a chloroplast in a photograph measures 2.4 mm

the magnification of the photograph is $\times 800$



$$\text{magnification} = \frac{\text{image size}}{\text{actual size}}$$

$$\begin{array}{l} \text{isolate} \\ \text{actual size,} \\ \text{divide both} \\ \text{sides by} \\ 800 \end{array} \quad \begin{array}{l} \times 800 \\ \frac{\times \text{actual size}}{\times 800} \end{array} = \frac{2.4 \text{ mm}}{\text{actual size}} \quad \begin{array}{l} \text{denominator} \\ \text{is unknown} \\ \text{(multiply to} \\ \text{remove)} \end{array}$$

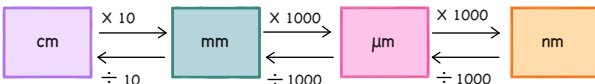
$$\frac{\times \text{actual size}}{800}$$

to keep balanced, do the same operation to both sides

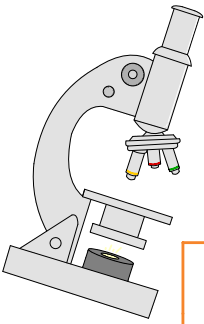
$$\text{actual size} = \frac{2.4}{800}$$

$$\text{actual size} = 0.003 \text{ mm}$$

magnification scale	shows how many times larger an image is than an actual object, usually shown with an X
scale bar	a line of an image representing a known actual length
magnification	the number of times larger the image is than the actual object
image size	the size of the image being measured, usually in mm
actual size	the real size of the object



Calculating Magnification



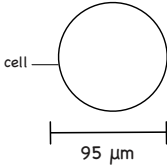
magn

large

ify

to make

} in science, magnification is the number of times larger an image is than the actual object



step 1.

magnification =

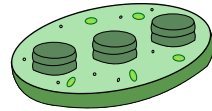
step 2.

step 3.

step 4.

a chloroplast in a photograph measures 2.4 mm

the magnification of the photograph is X 800



magnification =

$$\begin{array}{c} \text{X-800} \\ \text{X-actual-size} \\ \hline \text{X-actual-size} \\ \text{X-800} \end{array} = \frac{2.4 \text{ mm}}{\text{actual-size}}$$

actual size =

actual size =

magnification scale	shows how many times larger an image is than an actual object, usually shown with an X
magnification	
	the size of the image being measured, usually in mm
actual size	

