

# **Topic: Measures and motion**

/Chapter4/



# Area

Consider a square that is 1cm by 1cm. It has an area of  $1\text{cm}^2$ .

What is its area in  $\text{mm}^2$ ?

1cm

$$A = 1\text{cm}^2$$

1cm

10mm

$$A = 100\text{mm}^2$$

10mm

$$1\text{cm}^2 = 100\text{mm}^2$$

## Exercise 1

Convert  $16\text{cm}^2$  to  $\text{mm}^2$

$95\text{mm}^2$  to  $\text{cm}^2$

$7\text{m}^2$  to  $\text{cm}^2$

$8400\text{cm}^2$  to  $\text{m}^2$



Answer

$$\text{Convert } 16\text{cm}^2 = 1600 \text{ mm}^2$$

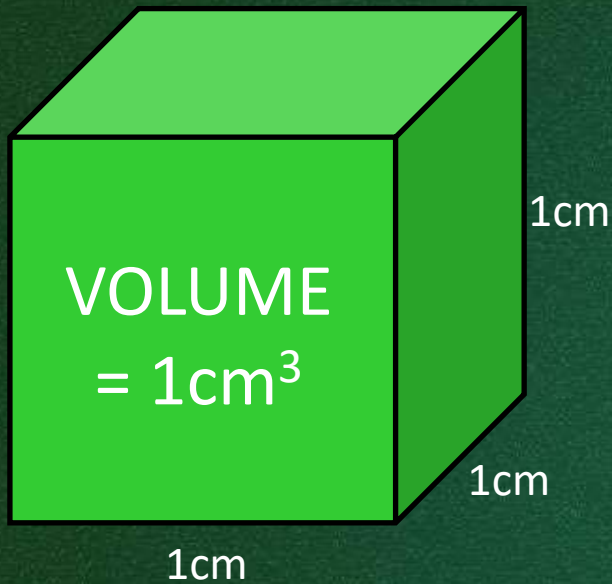
$$95\text{mm}^2 = 0.95 \text{ cm}^2$$

$$7\text{m}^2 = 70000 \text{ cm}^2$$

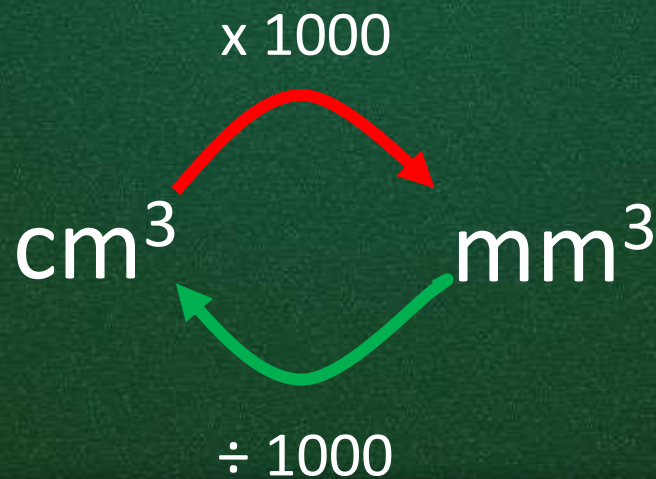
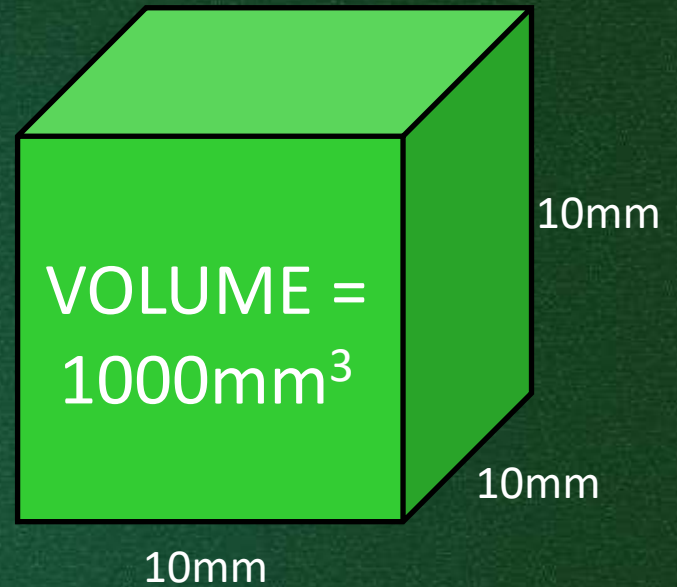
$$8400\text{cm}^2 = 0.84 \text{ m}^2$$



# Volume



=



## Exercise 2

Convert  $5\text{cm}^3$  to  $\text{mm}^3$

$9\text{m}^3$  to  $\text{cm}^3$

$1500\text{mm}^3$  to  $\text{cm}^3$

$960000\text{cm}^3$  to  $\text{m}^3$

$0.07\text{m}^3$  to  $\text{mm}^3$



Answer

$$\text{Convert } 5\text{cm}^3 = 5000 \text{ mm}^3$$

$$9\text{m}^3 = 9'000'000 \text{ cm}^3$$

$$1500\text{mm}^3 = 1.5 \text{ cm}^3$$

$$960000\text{cm}^3 = 0.96 \text{ m}^3$$

$$0.07\text{m}^3 = 70'000'000 \text{ mm}^3$$



Imperial



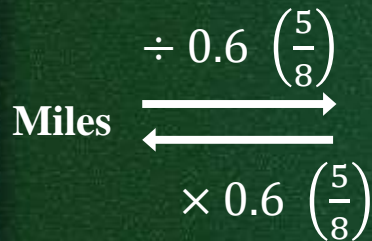
Metric

- Foot
- Yard
- Mile



- Centimetre
- Metre
- Kilometre

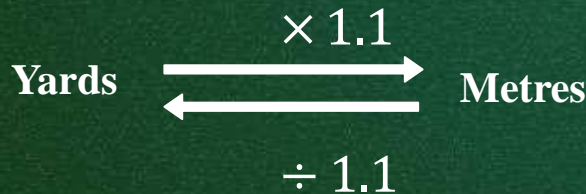
### Approximate ( $\approx$ ) Conversions



$$1 \text{ km} \approx 0.6 \text{ mile}$$

$$1.6 \text{ km} \approx 1 \text{ mile}$$

$$= 1760 \text{ yard}$$



$$1 \text{ yard} \approx 0.9 \text{ m}$$

$$1.1 \text{ yards} \approx 1 \text{ m}$$

$$1 \text{ yard} = 3 \text{ feet}$$

$$1 \text{ foot} \approx 30 \text{ cm}$$

In the UK, the USA and some other countries, feet, yards and miles are used as measures of distance.



Example:

1) Convert the following measures

a) 3 feet = \_\_\_\_\_ cm

b) 64 km = \_\_\_\_\_ miles

c) 240 cm = \_\_\_\_\_ feet

d) 4 km = \_\_\_\_\_ miles

e) 4 yards = \_\_\_\_\_ feet

f) 300 feet = \_\_\_\_\_ yards

g) 2 miles = \_\_\_\_\_ yards

h) 7040 yards = \_\_\_\_\_ miles



Example:

1) Convert the following measures

- a) 3 feet =   90   cm
- b) 64 km =   40   miles
- c) 240 cm =   8   feet
- d) 4 km =   2.5   miles
- e) 4 yards =   12   feet
- f) 300 feet =   100   yards
- g) 2 miles =   3520   yards
- h) 7040 yards =   4   miles

