

# Relationship between area units (cm<sup>2</sup> to m<sup>2</sup>)

MODULE 5 · MEASURES — LENGTH, AREA, VOLUME, MASS AND CAPACITY MEASURES

Area units don't step by 100 the way you might guess:  $1 \text{ m}^2 = 10,000 \text{ cm}^2$ , because a metre is 100 cm each way ( $100 \times 100$ ).

→ A  $1 \text{ m} \times 1 \text{ m}$  square =  $100 \text{ cm} \times 100 \text{ cm} = 10,000 \text{ cm}^2$ .

|     |              |
|-----|--------------|
|     | $\times 100$ |
| 100 | 10000        |

Total: 100

## HOW TO ANSWER TODAY

- Convert units.** To a SMALLER unit → multiply. To a BIGGER unit → divide. Common factors:  $\text{cm} \leftrightarrow \text{mm} \times 10$ ,  $\text{m} \leftrightarrow \text{cm} \times 100$ ,  $\text{km} \leftrightarrow \text{m} \times 1,000$ ,  $\text{kg} \leftrightarrow \text{g} \times 1,000$ ,  $\text{l} \leftrightarrow \text{ml} \times 1,000$ .

$250 \text{ cm} \rightarrow \text{m}: \div 100 = 2.5 \text{ m}$  ·  $3.5 \text{ kg} \rightarrow \text{g}: \times 1,000 = 3,500 \text{ g}$

## WARM-UP

- Aoife is designing a mosaic strip to run along the school library wall. The strip will be **15 m** long, but she needs the length in centimetres to plan the tiles. How many centimetres is **15 m**?  
Convert 15 m to cm.
- 5th class are decorating a **4 m<sup>2</sup>** banner to advertise the cake sale for the Junior Infants' new playground. They want to know the banner's area in square centimetres so they can plan the lettering. Convert **4 m<sup>2</sup>** to **cm<sup>2</sup>**, using **1 m<sup>2</sup> = 10 000 cm<sup>2</sup>**.  
Convert 4 m<sup>2</sup> to cm<sup>2</sup>. ( $1 \text{ m}^2 = 10\,000 \text{ cm}^2$ )

## PRACTICE

- At the school summer fair, 5th class build a fairground-style spin-the-wheel out of card. The painted face of the wheel measures **30000 cm<sup>2</sup>**. Convert this area to m<sup>2</sup>. (**1 m<sup>2</sup> = 10 000 cm<sup>2</sup>**)
- 5th class are lining up along the corridor wall before heading out to the yard. The line stretches **717 cm** from the classroom door to the noticeboard. How long is the line in metres?  
Convert 717 cm to m.

## CHALLENGE

- 5th class are taping out a giant Snakes and Ladders track in the school yard, with the full snaking path measuring **5969 cm** from start to finish. For their maths display, they need to record the path length in kilometres. How many kilometres long is the track?  
Convert 5969 cm to km.
- Cian is helping his teacher mark out a sprint lane on the school yard for the Cumann na mBunscol athletics day. The lane covers an area of **120000 cm<sup>2</sup>**. What is this area in m<sup>2</sup>? (Remember, **1 m<sup>2</sup> = 10 000 cm<sup>2</sup>**.)  
Convert 120000 cm<sup>2</sup> to m<sup>2</sup>. ( $1 \text{ m}^2 = 10\,000 \text{ cm}^2$ )