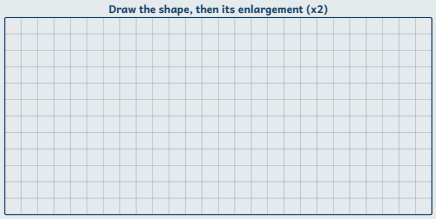
Enlargement and scale factor

MODULE 8 · LOCATION, TRANSFORMATIONS AND SCALE REVIEW

An **enlargement** changes a shape's size by a **scale factor** — every length is multiplied by it, while angles stay the same.



→ Scale factor 2 doubles every side; a 3 cm side becomes 6 cm.

HOW TO ANSWER TODAY

- **Scale drawing.** Scale 1:N means 1 unit on the drawing = N units in real life. Multiply the drawing length by N.
  Scale 1:100, drawing 5 cm → real 5 × 100 = 500 cm = 5 m
- **Transformations.** Slide without turning → translation. Flip (mirror) → reflection. Turn → rotation.
  Triangle slid left → translation · Letter flipped → reflection

WARM-UP

1. Cian draws a scale plan of the 5th-class classroom for his project, using a scale of **1:10**. On the plan, the teacher's desk measures **10 cm** long. What is the real length of the desk in centimetres?
   > A scale drawing is drawn at 1:10. A line on the drawing measures 10 cm. What is the real length?
2. Oisín draws a scale plan of his classroom for a maths project at a scale of **1:10**. The teacher's desk measures **12 cm** on his drawing. What is the real length of the desk in centimetres?
   > A scale drawing is drawn at 1:10. A line on the drawing measures 12 cm. What is the real length?
3. Oisín draws a plan of the classroom dice-rolling track at a scale of **1:10** for his maths copy. On the drawing, the track measures **9 cm**. What is the real length of the track in centimetres?
   > A scale drawing is drawn at 1:10. A line on the drawing measures 9 cm. What is the real length?
4. Aoife is making a tessellation pattern for the 5th class corridor display. She moves each shape so it slides into its new position without flipping or turning. Name the transformation she is using: translation, reflection or rotation?
   > Name the transformation described: the shape slides without flipping or turning. (Choose translation, reflection or rotation.)

PRACTICE

1. Aoife's class is designing a scale drawing of the new SuperValu car park at a scale of **1:200**. On her drawing, the length of the car park measures **15 cm**. What is the real length of the car park in centimetres?
2. Cian's 5th class is planning a school tour to Glendalough and Mr O'Brien sketches the visitor centre on a plan drawn at a scale of **1:50**. The front wall of the centre measures **9 cm** on his plan. What is the real length of the wall in centimetres?
   > A scale drawing is drawn at 1:50. A line on the drawing measures 9 cm. What is the real length?