

Enlargement and scale factor

WHAT THIS LESSON TEACHES

A transformation that makes a shape bigger while keeping its proportions. Every length is multiplied by the same number.

→ A 2 cm by 3 cm rectangle enlarged by scale factor 2 becomes 4 cm by 6 cm.

→ If a 4 cm side becomes 12 cm the scale factor is 3 because 4 times 3 equals 12.

MODEL THIS ON THE BOARD

ENLARGE A 2 CM BY 3 CM RECTANGLE BY SCALE FACTOR 2

- ① Start with sides of 2 cm and 3 cm.
- ② Multiply each length by 2.
- ③ The new sides measure 4 cm and 6 cm.

ANSWER KEY

Scaffold: visual check on the page

Q1: 225 cm

Q2: 196 cm

Q3: 56 cm

Q4: 10 cm

Q5: 18 cm

a) **Always** — Multiplying each side by 2 always doubles it.

b) **Always** — All sides scale equally so proportions and angles stay the same.

c) **Never** — Area multiplies by the square of the scale factor so it becomes four times as big.

d) **Always** — Every length is multiplied by the same scale factor.

EXTENSION SHEET · STRETCH ANSWERS

S1: 25 m

S2: 30 m

S3: 4.5 m